

2007

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# Outlook

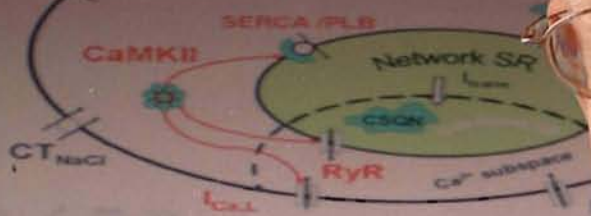


Washington  
University in St. Louis  
SCHOOL OF MEDICINE

WINTER 2007

## Signals of the heart

Modeling and measuring  
cardiac bioelectricity



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**Posters on parade** More than 115 junior faculty, fellows, postdoctoral researchers and students from a variety of School of Medicine training and research programs presented posters of their basic, clinical and translational research at the Research Training Symposium and Poster Session held on October 25 in the Farrell Learning and Teaching Center. Above, second-year doctor of physical therapy student Ruth L. Porter explains her research to second-year medical student Peter C. Chimenti; at left, Lisa de las Fuentes, MD, assistant professor of medicine, reviews her research with Byron W. Yount, predoctoral trainee in the Department of Otolaryngology.

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# Outlook

Washington University School of Medicine  
VOLUME XLIV • NUMBER 4 • WINTER 2007



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## Young Gynecology

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**COVER** Yoram Rudy, PhD, the Fred Saigh Distinguished Professor of Engineering and director of the Cardiac Bioelectricity and Arrhythmia Center, focuses on theoretical approaches to the study of cardiac arrhythmias and on the development of novel diagnostic tools to treat these disorders. For more on this story, please turn to page 16.

PHOTO BY TIM PARKER

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# Nexus for 21<sup>st</sup> century science

BJC Institute of Health at Washington University to speed discoveries and their applications to patient care

**T**he largest building ever constructed on the campus of Washington University School of Medicine in St. Louis will be the home base for BioMed 21 — the university's innovative research initiative designed to speed scientific discovery and rapidly apply breakthroughs to patient care. The building is supported by a \$30 million gift to the medical school from BJC HealthCare and will be named the BJC Institute of Health at Washington University.

"BJC HealthCare's gift to the university for this building is an investment in the talent and dedication of the researchers who will occupy it and those who collaborate with them," says Washington University Chancellor Mark S. Wrighton. "The facility will foster new ideas and creative solutions that will dramatically change medical care in the future. We are truly appreciative of BJC HealthCare's forward-looking commitment."

Launched in 2003, BioMed 21 creates a multidisciplinary- and translational-research imperative for basic scientists and clinician-researchers from many medical disciplines. Construction began in the summer of 2007 on the new building, and researchers will occupy labs in it by December 2009.

"This expansion is monumental and demonstrates the strength of our commitment to research that will revolutionize medical care," says Larry J. Shapiro, MD, executive vice chancellor for medical affairs and dean of the School of Medicine.

## Facility to be the largest building ever constructed on campus

The Institute will house BioMed 21 laboratories and support facilities as well as two academic departments of the School of Medicine and some support operations of Barnes-Jewish Hospital.

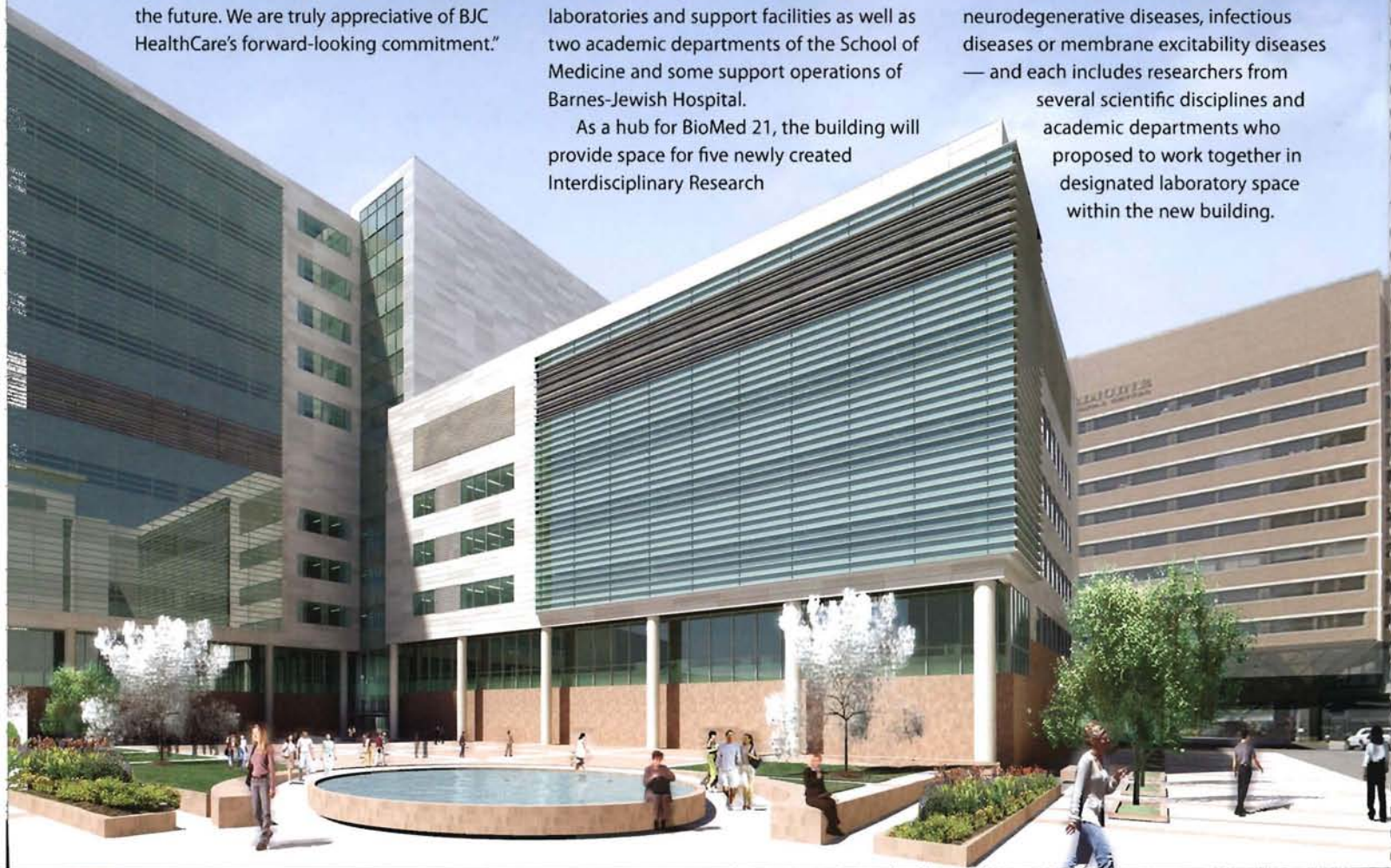
As a hub for BioMed 21, the building will provide space for five newly created Interdisciplinary Research

Centers (IRCs). The IRCs will occupy two floors and other School of Medicine facilities will occupy another three floors of the planned 11 floors in the nearly 700,000-square-foot building. The university will be adding 240,000 square feet of research space, and the estimated total cost of the building is \$235 million.

The academic departments of the School of Medicine that will have laboratory space in the building are the Department of Pathology and Immunology and the Department of Obstetrics and Gynecology.

The five IRCs selected to occupy the new building were chosen through a novel competitive application process that assessed the proposals' scientific merit and alignment with the core principles of the BioMed 21 initiative. Each addresses a disease-specific area — cancer, cardiovascular disease, neurodegenerative diseases, infectious diseases or membrane excitability diseases — and each includes researchers from

several scientific disciplines and academic departments who proposed to work together in designated laboratory space within the new building.





# NIH grant to help bring new treatments to St. Louis area

## Regional initiative part of national effort

The School of Medicine will lead a regional group of institutions under a new \$50 million, five-year grant program that will greatly enhance clinical and translational research.

"This grant creates a comprehensive approach that will benefit patients by bringing together basic research scientists and clinical researchers as well as health care and commercial institutions in a coordinated system dedicated to improving patient care," says program principal investigator Kenneth S. Polonsky, MD, the Adolphus Busch Professor and head of the Milliken Department of Medicine.

The grant from the National Institutes of Health (NIH), the primary agency of the U.S. government responsible for biomedical research, marks the second wave of funding through the Clinical and Translational Science Awards (CTSA) program, an effort aimed at reengineering the country's clinical research enterprise.

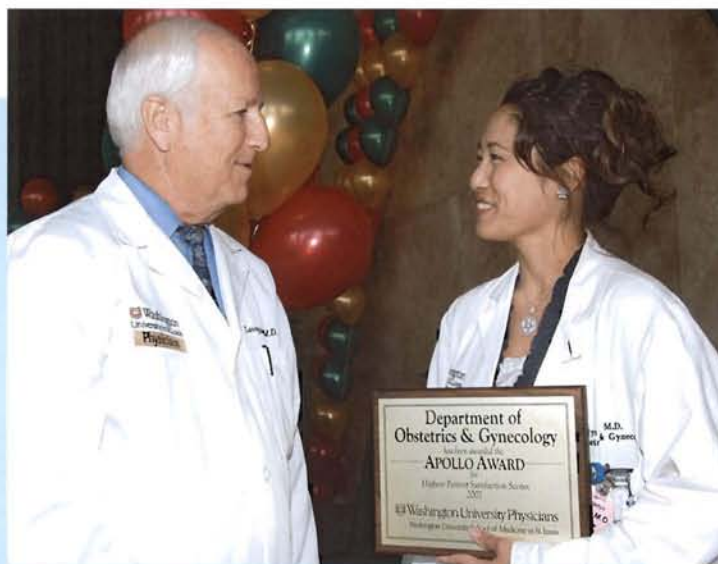
### Academic health center partners with CTSA, nationwide:

**2007: 24 institutions**

**2012: 60 institutions**

"This program will allow investigators to collaborate more easily across departmental and institutional boundaries and take full advantage of local and regional resources," says Polonsky. "These broad-based interactions are unprecedented and in time will transform the way in which clinical research and training is conducted."

The Institute of Clinical and Translational Sciences created by the new grant is a collaboration among several regional institutions, including Washington University, BJC HealthCare, Saint Louis University School of Public Health, Doisy College of Health Sciences and Center for HealthCare Ethics, the University of Missouri-St. Louis College of Nursing, Southern Illinois University Edwardsville School of Nursing, St. Louis College of Pharmacy and others.



**Triple play** School of Medicine Dean Larry J. Shapiro, MD, congratulates Gladys Tse, MD, assistant professor of obstetrics and gynecology, as she accepts the Apollo Award for her department at the annual Clinical Staff Recognition Celebration held on September 21 at the Center for Advanced Medicine. It is the third time the Department of Obstetrics and Gynecology has received the award, which is given to the clinical department that achieves the highest patient satisfaction scores in the current fiscal year.

## Mackinnon joins Institute of Medicine

Susan E. Mackinnon, MD, has been elected to the Institute of Medicine of the National Academy of Sciences, one of the highest honors medical scientists in the United States can receive. Mackinnon, the Sydney M. Jr. and Robert H. Shoenberg Professor and chief of the Division of Plastic and Reconstructive Surgery, was honored for her professional achievement in the health sciences.

A surgeon at Barnes-Jewish and St. Louis Children's hospitals, Mackinnon is considered an international authority on nerve regeneration, nerve transfer and on the use of limited immunosuppression in transplant patients. She established her international reputation as a surgeon in 1988 by completing the first donor nerve transplant, a procedure that can restore function to severely injured limbs that previously were considered irreparable.

Earlier this year, Mackinnon was named president of the American Association of Plastic Surgeons, a group that aims to advance the science and art of plastic surgery through surgical education, research, scientific presentations and professional interaction.

As an Institute of Medicine member, she makes a commitment to devote a significant amount of volunteer time on committees engaged in a broad range of health-policy issues.



Susan E. Mackinnon, MD



## Body and soul

Dale Thuet, left, a second-year doctoral student in the Program in Physical Therapy, prepares the InBody body scanner to analyze Nikki Morilak, a first-year doctoral student in physical therapy. After standing on the InBody scanner for about one minute, the machine reveals a person's body composition, body water balance, body mass index and body fat percentage.

During Physical Therapy Month (October), physical therapy doctoral students at the School of Medicine offered various screenings, including blood pressure, posture and foot, as well as demonstrations of healthy snacks.



ROBERT EUSTON

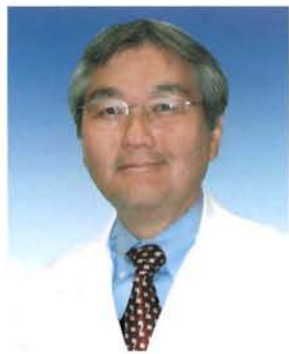
## Yokoyama heads MD/PhD program

Wayne M. Yokoyama, MD, is the new director of the School of Medicine's Medical Scientist Training Program (MSTP). He succeeds Daniel E. Goldberg, MD, PhD, who has stepped down after 10 years as director.

Yokoyama, the Sam J. Levin and Audrey Loew Levin Chair for Research on Arthritis and an investigator of the Howard Hughes Medical Institute, is the sixth director of the MSTP.

"I look forward to building on Dr. Goldberg's legacy to enhance physician-scientist training at Washington University," Yokoyama says. "This is an exciting time for biomedical research with so many opportunities for physician-scientists to explore with their basic scientist and clinical colleagues and relate basic laboratory findings to the clinic."

With 183 students, the MSTP at Washington University is the largest MD/PhD program in the nation. Since it was established in 1969, 427 individuals have graduated from the program.



Wayne M. Yokoyama, MD

## Six faculty named fellows in AAAS, largest science society

### Highest honor awarded by group

The American Association for the Advancement of Science (AAAS), has added six School of Medicine faculty to its ranks. The highest honor awarded by AAAS, the rank of fellow is bestowed upon members by their peers in recognition of scientifically or socially distinguished efforts to advance science or its applications.

#### Biological Sciences

**Stephen M. Beverley, PhD**, the Marvin A. Brennecke Professor and head of the Department of Molecular Microbiology, was elected for the development and application of molecular genetic tools to the study of how protozoan parasites cause disease.

**Robert P. Mecham, PhD**, the Alumni Endowed Professor of Cell Biology and Physiology, professor of pediatrics and of medicine, was elected for distinguished contributions to the field of elastic fibers, particularly for analysis of elastic fiber composition and assembly, and the cell biology of elastin.

**Helen M. Piwnica-Worms, PhD**, professor of cell biology and physiology and of medicine and Howard Hughes Medical Institute Investigator in Cell Biology and Physiology, was elected for distinguished contributions to the field of cell biology, particularly cell cycle regulation and its implications for understanding human cancer.

#### Medical Sciences

**Jonathan D. Gitlin, MD**, the Helene B. Roberson Professor of Pediatrics, professor of genetics and of pathology and immunology, was elected for distinguished contributions to the field of metals in biology and for groundbreaking discoveries on absorption, metabolism and distribution of metals in health and disease.

**Eduardo A. Groisman, PhD**, professor of molecular microbiology and Howard Hughes Medical Institute Investigator in Molecular Microbiology, was elected for innovative research investigating mechanisms by which bacteria modulate expression of their genes in response to environmental stimuli and are able to survive within cells of the host.

#### Neuroscience

**John E. Heuser, MD**, professor of cell biology and physiology, was elected for distinguished, groundbreaking contributions in deep-etch and freeze-fracture electron microscopy.

### 2007 AAAS Fellows

**Stephen M. Beverley, PhD**

**Jonathan D. Gitlin, MD**

**Eduardo A. Groisman, PhD**

**John E. Heuser, MD**

**Robert P. Mecham, PhD**

**Helen M. Piwnica-Worms, PhD**



## RADIATION ONCOLOGY

# Bright scans, dangerous tumors

PET scans prove more sensitive than standard protocols based on size

**T**wo studies recently conducted in the Department of Radiation Oncology show the benefit of PET scans for both diagnosis and follow-up of cervical cancer.

One study, published in the October 15, 2007 issue of the journal *Cancer*, concluded that the brightness of a cervical tumor in a PET scan done at the time of diagnosis indicates how dangerous the cancer is — no matter how small or large the tumor.

The findings suggest that PET scans provide a more sensitive indicator of tumor aggressiveness than standard staging protocols, which mainly rely on tumor size.

"We've seen that among patients with the same stage of cervical cancer, there will be some who don't respond to treatment as well as others," says Elizabeth A. Kidd, MD,

lead author of the study and a Barnes-Jewish Hospital resident in the department. "Our study demonstrates that PET scans done at diagnosis can identify those patients who have a poorer prognosis."

Kidd and her colleagues found that patients diagnosed with intensely glowing tumors under PET were more likely to have cancerous cells in their lymph nodes, persistent disease after initial treatment, recurrence of disease in the pelvis and lower survival rates.

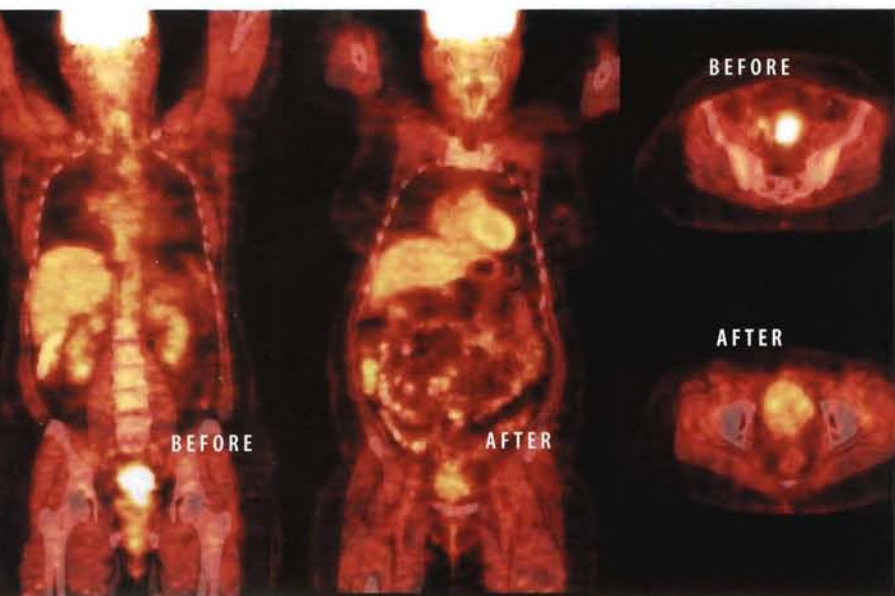
The second study, published in the November 21, 2007 issue of the *Journal of the American Medical Association*, showed that PET scans three months after treatment has ended can ensure that patients are disease-free or warn that further interventions are needed.

"This is the first time we can say that we have a reliable test to follow cervical cancer patients after therapy," says Julie K. Schwarz, MD, PhD, lead author of the second study and also a Barnes-Jewish Hospital resident in the Department of Radiation Oncology.

Without a test like PET, it can be difficult to tell whether treatment has eliminated cervical tumors — post-treatment pelvic exams, CT scans and Pap tests can miss cervical tumors, and no blood test exists to detect the cancer.

"We ask patients to come back for a follow-up visit about three months after they finish treatment, and we perform a PET scan," Schwarz says. "If the scan shows a complete response to treatment, we can say with confidence that they are going to do extremely well. That's really powerful."

The studies indicate that patients with bright tumors on a PET scan at diagnosis should be followed more closely than usual and that patients with persistent tumors that emit a strong signal after treatment need additional therapy.







ROBERT BOSTON

**Top teacher** Noopur Gangopadhyay, left, a fourth-year medical student, talks with Thomas M. De Fer, MD, associate professor of medicine, and Kari Wanat, also a fourth-year medical student, at the Distinguished Service Teaching Awards held on November 8 at the Eric P. Newman Education Center. The Class of 2008 awarded De Fer the Clerkship Director of the Year award. Among the other honorees were Gladys Tse, MD, who was named Clinical Lecturer of the Year by the Class of 2008, and the Department of Medicine, which was named the Clinical Department of the Year.

## Shaw joins Howard Hughes Institute

Andrey S. Shaw, MD, the Emil R. Unanue Professor of Immunobiology in the Department of Pathology and Immunology, has been named an investigator of the Howard Hughes Medical Institute (HHMI).

Shaw was one of 15 researchers selected. More than 200 physician-scientists applied for this year's competition,



Andrey S. Shaw, MD

which was focused on researchers who probe basic biomedical questions in innovative ways that help rapidly improve patient diagnosis and care.

Shaw, who is director of the Division of Immunobiology, was selected by HHMI for his work with podocytes, cells in a kidney structure called the glomerulus that filter the blood to make urine.

In 1999, Shaw found a gene he had identified in immune studies was essential for normal podocyte function. Loss of the gene led to kidney failure in mice. Now his lab is involved in a complex search for other genes that are essential to podocyte function and may as a result also be linked to kidney failure.

## National study to focus on St. Louis metro area children

Results to shed light on child, adult disease

Washington University School of Medicine is collaborating in what will be the largest study of child and human health ever conducted in the United States.

The National Institutes of Health has selected the city of St. Louis and Macoupin County IL as sites for the National Children's Study, an extensive population-based study looking at the health and development of children.

The consortium also includes Saint Louis University, Southern Illinois University Edwardsville School of Nursing, Southern Illinois University Medical School and St. Louis Battelle Memorial Institute. The consortium is one of 22 new centers added to the study.

"Examining the kinds of questions that influence the health and well-being of children is critically important to the entire community, whether you are a parent, grandparent or researcher," says Terry Leet, PhD, lead investigator of the St. Louis and Macoupin County study sites and chairman of the department of community health at Saint Louis University School of Public Health. "What we find could be a potential gold mine of data for scientists who are studying what causes diseases in children."

The study will follow a representative sample of 100,000 children from before birth to age 21, seeking information to prevent and treat some of the nation's most pressing health problems. About 250 participants from the city of St. Louis and 250 participants from rural Macoupin County are expected to enroll for each of four years starting in 2009.

To spearhead the St. Louis-area study, Saint Louis University received a \$26 million, five-year grant from the National Institute of Child Health and Human Development. The cost of the research is estimated at \$3 billion over the next 25 years.

**"The National Children's Study is an important step in setting the foundation for understanding the environmental and genetic determinants of pediatric and adult diseases."**

MICHAEL R. DEBAUN, MD, MPH







## Tour of Missouri buzzes Center for Advanced Medicine

On the final day of the Tour of Missouri professional bicycle race, some of the world's fastest road cyclists raced over a 10-mile course around St. Louis, passing by the Center for Advanced Medicine seven times. The state's inaugural stage race covered almost 600 miles over six days, September 11–16, and touched Kansas City, Springfield, Branson, Jefferson City, Columbia and St. Charles. In St. Louis, the final day's race attracted an estimated crowd of 55,000 who watched George Hincapie of the Discovery Channel Cycling Team win the individual title. Fans organized parties and set up roadside picnics all around the course. City and state officials praised the race's organization and the fans; race promoters predicted that a replay is likely next year.



Alberto Contador of Spain,  
winner of the 2007 Tour de France

## NEUROLOGY

# Drug preserves the neural “forest” during a seizure

**E**pilepsy's side effects can sometimes be as troubling as the seizures. Cognitive impairment, including memory loss and reduced attention span, is a pressing concern.

Now scientists have directly observed seizure-induced structural changes in brain cells in laboratory animals. They report that their insights allowed them to use a drug to block those changes in the brain.

“Assuming that these structural changes are linked to cognitive impairment — and there's a lot of data to suggest that's true — then this could provide us with a path to therapies that reduce cognitive problems in epilepsy,” says senior author Michael Wong, MD, PhD, assistant professor of neurology, anatomy and neurobiology, and pediatrics.

About 1 to 2 percent of the general population suffers from some form of

epilepsy. Severe or prolonged seizures can cause brain cell death, leading to anatomic damage visible on brain scans. But the cognitive impairments caused by seizures cannot always be linked to discernible brain damage.

Prior studies suggested that seizures may damage dendrites, treelike branches that extend from a nerve cell to receive signals. Researchers noted the loss of spines, small bumps on the exterior of the dendrite. Spines are known to be important for the formation of junctions where two nerve cells communicate across a small gap. But the scientists couldn't prove a cause-and-effect link between seizures and spine loss or probe the mechanisms behind the losses.

Led by postdoctoral fellows Ling-hui Zeng, MD, PhD, and Lin Xu, PhD, a team of researchers in Wong's laboratory used a

Dendrites before seizure: tree-like branches

Dendrites after seizure: widespread damage

drug to induce seizures in mice and imaged brain cells before, during and after seizures.

“We found changes were happening quite rapidly in the dendrites,” Wong says. “They would become swollen and the spines would disappear. After the seizure, the swelling would go down but the spines did not return for at least 24 hours.”

When researchers probed the mechanisms behind the spine loss, they found seizures were causing the breakdown of actin, a molecule widely used in cell structures. When they gave the mice a drug, FK506, prior to inducing seizures, they were able to block that breakdown.





- Race

- Ethnicity

- Gender

- Religion

- Sexual orientation

- Disability

- Economic status

# Full-Spectrum Diversity

These days, it's more than just changing the "*face*" of medicine. It's about creating an environment rich in ideas, perspectives — and global potential.

## A model of inclusion ►

Washington University School of Medicine, in partnership with Barnes-Jewish Hospital and St. Louis Children's Hospital, can assume and maintain a leadership role as an academic medical center actively engaged in a variety of diversity initiatives touching upon every aspect of its mission.

DIVERSITY USED TO BE A PROGRAM. Or someone's agenda. Or maybe just a bundle of good intentions. Now it's increasingly seen as a defining element of a healthy institutional culture. And sustainability has become the watchword for whatever programs are put in place. The architects of a community of diversity at the School of Medicine and its partner hospitals are looking beyond isolated programs toward a shared vision of new possibilities for engaging the School's core mission of teaching, patient care and research. The overarching goal has become meeting the challenges of biomedicine in a global society.





## INTERNATIONAL CONNECTIONS

INTERNATIONAL  
RECRUITMENT

## NATIONAL INITIATIVES

PUBLIC POLICY

## ST. LOUIS REGION AND CENTRAL STATES

MINORITY BUSINESSES

## NEIGHBORHOOD ENVIRONS

ACADEMIC PUBLISHING AND  
COMMUNICATIONS

SOCIAL ORGANIZATIONS  
FAITH-BASED GROUPS

 **Washington**  
University in St. Louis  
SCHOOL OF MEDICINE

BROADENING DIVERSITY  
OF CAMPUS CULTURE

IMMIGRANT AND  
INTERNATIONAL  
PATIENTS

K-12 SCHOOLS  
MIDDLE SCHOOLS  
HIGH SCHOOLS  
SCIENCE CENTERS

LOCAL PHYSICIANS  
COMMUNITY HEALTH  
CENTERS  
HEALTH DEPARTMENTS

CULTURAL  
AWARENESS

LANGUAGE  
SKILLS

NATIONAL AND INTERNATIONAL  
RESEARCH INITIATIVES

SENSITIVITY  
TRAINING

### DIVERSITY GOALS:

- Recognize issues
- Increase awareness
- Minimize obstacles
- Offer opportunities
- Encourage sensitivity
- Continue dialogue





## The future of medicine starts here

The biggest contributor to change — and the hardest thing to achieve — has been transforming the environment, according to Will R. Ross, MD, associate dean for diversity.

“When we wrote our strategic plan years ago, we looked at what would preclude us from being successful in improving diversity after two cycles of medical students,” Ross says. “We learned that it would be what students would sense when they arrived here, how well they would be embraced, the level of contentment living in St. Louis, and finding the social network to engage them.”

Ross also recognized early on that in order for a diversity effort to truly take hold and become sustainable it must address not only those groups traditionally underrepresented in medicine — such as African Americans, Hispanics or Native Americans — but diversity as a whole. “I felt we needed to extend a broader net to capture gender, religious beliefs, sexual orientation, disabilities and the economically disadvantaged,” he says.

A diverse group of people broadens a discussion, says Ross. “When you diversify any group — students, physicians, scientists, educators — you will then stimulate a greater discussion because there are so many new ideas being generated.”

Students at the School of Medicine agree.

When Monique R. Farrow, now a third-year medical student, first arrived, “I didn’t get the feeling that Washington University was an ‘old boys’ club.’ I felt more openness to change and progress. The faculty made it clear that they value students’ opinions and suggestions and put our recommendations into place.”

Ross says that sort of appreciation is not uncommon. “The students here know there is something unique, positive and profoundly transformative at Washington University that gives them the opportunity to see through the lens of so many different peoples.”



## Faculty as a community of mentors

The student population looks to the faculty as vital role models for careers in medicine and science. Two subcommittees formed in 2002, Gender Equity and Faculty Diversity, have helped bring greater diversity to the faculty while at the same time broadening attitudes toward diversity issues.

“These committees raised the level of awareness,” says Diana L. Gray, MD, associate dean for faculty affairs and professor of obstetrics and gynecology. “Diversity is not just a student issue, but it crosses all levels of the school, and we must focus on the faculty as well.”

Among the successes of the Gender Equity Committee is a gender-neutral policy that allows for up to two one-year suspensions of the tenure probationary period for work/life issues, such as caring for a child or elderly parent.

For increasing the number of women faculty and advocating for change, Gray gives much of the credit to the Academic Women’s Network, a volunteer group organized in



*“From frequent discussions with our students, we have learned that the best way of increasing cultural awareness is by interacting with people who are different, rather than passively listening to lectures on cultural sensitivity.”*

**Will R. Ross, MD, associate dean for diversity**





*"Whether it's a medical school or a Fortune 500 company, we need a work force that reflects our constituency. It's easier to relate to a physician who reflects your culture back to you, and we need people who can understand where our patient population is coming from."*

**Diana L. Gray, MD, associate dean for faculty affairs**

1990 to promote professional and social interactions among the female academic faculty and to assist and mentor female junior faculty and trainees in the pursuit of their goals.

The Faculty Diversity Committee, chaired by Mario Castro, MD, MPH, seeks to develop a broad diversity in the Washington University medical community and to enhance recruitment and retention of highly qualified underrepresented minority faculty. The committee helped design an incentive plan for departments to recruit such faculty, with support offered up to three years.

"We need our faculty to understand the value of drawing from a diverse talent pool in order to have the brightest and most talented faculty anywhere," says Castro.

Some of the obstacles to attracting faculty from underrepresented groups mirror those of the students: location and the perception that St. Louis is segregated, Gray says. "But," she adds, "once people arrive here and realize how collaborative and supportive our environment is, they understand they won't find a better place to work."

## Diverse patients, diverse needs

In 2006, Barnes-Jewish Hospital launched the Center for Diversity and Cultural Competence, directed by Brenda A. Battle, in an effort to recruit and retain underrepresented minority residents and fellows to enhance the diversity of physicians providing care at the hospital.

One of the group's signature programs, the Residents and Fellows Diversity Initiative, offers grants to 26 residents and fellows who help recruit residents, work in the community offering health care services to the underserved, and mentor students at the School of Medicine. In the initiative's first year, 19 residents and fellows participated; there were 55 applicants for the 2007-08 academic year.

"The importance of diversity in the workplace and the understanding of cultural competency transcends all of medicine," says resident Corey G. Foster, MD. "It helps us deliver high quality patient care within the hospital setting and bridge the social gaps that exist in everyday society."

Battle credits the mentoring program for the record number of minority School of Medicine graduates choosing to do their residencies at Barnes-Jewish Hospital. "These students want to come here and want to feel included," she says. "If we make it a good experience for them, they will encourage their friends to come here as well."

Together with the School's Faculty Diversity Committee, the center is working to improve cultural competence among all those who take care of patients — from the medical assistant to the attending physician. One such effort is the development of a lecture series that presents case scenarios of various personality types. This sort of teaching, says Ross, heightens awareness about the ways we tend to categorize people with whom we interact.

"We're hoping the faculty will embrace this collaborative initiative to engage in culturally competent, patient-centered care," says Ross, "However, it must be woven seamlessly into their activities in order to realize the benefits."



*"Minority students who interview at Barnes-Jewish Hospital say they want two things: to feel welcomed and to have opportunities to become engaged in the community. They do look for the presence of other minorities, but if we show them that we want them here, we can recruit the best of the best."*

**Brenda A. Battle, director of the Center for Diversity and Cultural Competence at Barnes-Jewish Hospital**





## In the pipeline

To open the School of Medicine environment to more diversity among students and faculty, the Office of Diversity is developing a “pipeline,” or cultivating an interest in the school starting at the high school level for students, and encourages other initiatives to do the same.

One example, the Saturday Scholars, provides students from St. Louis-area high schools with a four-week anatomy course organized by medical students. The office then follows up with those students to find out whether they plan careers in science, health care or medicine.

Another pipeline program is the Health Care Advocacy Program in association with Barnes-Jewish Hospital. Washington University undergraduates have the opportunity to serve as a patient advocate at Barnes-Jewish for eight weeks, during which time they are exposed to patients from various cultures. Students who have participated in the program have begun to apply to the School of Medicine,

### ON THE WEB

[medschooldiversity.wustl.edu](http://medschooldiversity.wustl.edu)

[medofa.wustl.edu](http://medofa.wustl.edu)

[www.barnesjewish.org](http://www.barnesjewish.org)

says Lisa H. Stevenson, director of diversity programs.

In addition, the Office of Diversity offers a visiting elective program that offers fourth-year medical students from other schools who are interested

in enhancing diversity, working with the underserved or addressing health care disparities with an opportunity to receive up to \$2,000 in reimbursement for taking several courses. Students in that program are matched with a resident and a medical student mentor to expose them to the broader medical center community.

“We hope that when it’s time to think about residency programs, they will consider Washington University,” Stevenson says.



**Mentoring others who have the potential: Members of the Student National Medical Association.**

The Student National Medical Association (SNMA), a group that focuses on the needs and concerns of medical students of color, also holds numerous outreach opportunities in the area organized solely by students. They have a mentoring program with undergraduate students planning to apply to medical school, in which they talk about how to write essays for medical school applications, go over interviewing skills and what things to consider when applying to medical school, as well as one-on-one mentoring. SNMA students also have visited a local high school to teach anatomy to an advanced science class, taking organs from the anatomy lab as props.

“The high-school kids really enjoyed that,” says Farrow. “It was nice for them to gain exposure to medical students who look like they do.”

## A university-wide effort

Cultural diversity is more than just a School of Medicine commitment: Washington University in St. Louis as a whole has a coordinated effort underway to address this important issue.

Empaneled in the fall of 2005, the Coordinating Council for Diversity Initiatives is headed by Leah A. Merrifield, special assistant to the chancellor for diversity initiatives.

“We see the School of Medicine as a key partner in trying to facilitate a more diverse community,” says Merrifield. Through sharing best practices and cross-disciplinary learning, university leaders such as Ross and Gray and partners such as Battle now have a critical mass to make progress.

“Efforts under way at the School, the university and our affiliated hospitals are more comprehensive and complementary than ever before,” says Larry J. Shapiro, MD, executive vice chancellor for medical affairs and dean of the School of Medicine. “We’re in a climate of change, with new potential to enrich and diversify our medical center community.” □

*Beth Miller, Holly Edmiston and Eric Young contributed to this article.*



**A variety of programs in the community help get young people of all backgrounds more interested in studying science.**





# A MOST BRITTLE HYPOTHESIS

*Understanding why the  
unwelcome diagnosis of  
**celiac disease**  
often carries the further  
complication of  
**osteoporosis***

BY CANDACE O'CONNOR

A study reveals the link between an abnormal response to gluten — from wheat — and the “sponginess” of osteoporitic bones.



**Something was seriously wrong** with Debbie Adams, but her doctors were stumped. What was this mystery illness that had triggered such an odd mix of problems: diarrhea, bloating, fatigue, sleeplessness, irritability, anemia and severe weight loss? Still another symptom was osteoporosis, which had already stolen some 50 percent of her bone mass. And at that point, seven years ago, she was just 40 years old.

Weak and frustrated, Adams was visiting a bone specialist at the School of Medicine when she heard about a new research study. The NIH had funded gastroenterologist William F. Stenson, MD, professor of medicine, to examine 800 adults, half with osteoporosis and half with normal bone density, for an "under-investigated" problem: celiac disease. Adams became the first participant to test positive for this little-known autoimmune disease in which patients respond abnormally to gluten, a protein found in such grains as wheat and barley. This response results in injury to the lining of the intestines, so certain nutrients cannot be absorbed. Osteoporosis in celiac disease patients is a product of impaired absorption of dietary calcium.

Gluten-induced intestinal injury sets off a confusing, sometimes contradictory cascade of effects throughout the body. While many patients have diarrhea, a few have constipation; instead of losing weight, some gain. They may develop depression or anxiety, anemia, abdominal pain or an itchy rash; some women may find it difficult to conceive. Happily, the only treatment for this disease — adhering faithfully to a lifelong, gluten-free diet — can reverse these symptoms dramatically.

"Within six months on a gluten-free diet, I had regained 11 percent of my bone density," says Adams, a teacher and mother of three in Belleville IL. "Today, I'm happier, with more energy and a more positive view of life, and I've also regained much-needed weight and then some. I say now that once I turned 40, was diagnosed with celiac disease and went gluten-free, I started getting younger."



Healthy snacking means "gluten-free" for someone with celiac disease. Debbie Adams has seen an increase in bone density since beginning a gluten-free diet.

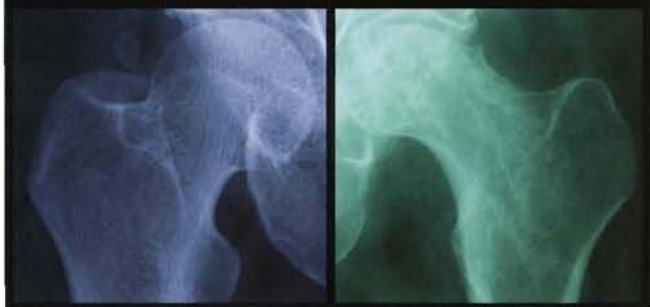
Despite its impact, celiac disease is under-diagnosed and poorly understood, even among some physicians. A 2004 NIH report estimated that 3 million Americans are affected, though 97 percent do not know it. Once Stenson published his study results, showing that 3 to 5 percent of osteoporosis patients had it, compared to one-half of one percent of those with normal bone density, he was flooded with celiac referrals.

"That tells me there's more celiac disease than people appreciate," says Stenson, the Nicholas V. Costrini Professor of Gastroenterology and Inflammatory Bowel Disease. "I think there are clinical circumstances in which it should be considered but is not now widely considered, and patients with iron deficiency anemia or osteoporosis should be tested."

Pediatricians also have become more aware of celiac disease, say James P. Keating, MD, and Robert J. Rothbaum, MD, pediatric gastroenterologists at St. Louis Children's Hospital. Last year, the two participated in a continuing medical education program, "Emerging Concepts in Celiac Disease." During discussion, they stressed that it can appear at any age and in many forms. "We once estimated the prevalence of celiac disease as one in 8,000 people," says Keating, the W. McKim Marriott Professor of Pediatrics, "while now we know that it's around 1 in 100."

Certain groups are more genetically susceptible. Rarely do African-Americans develop it; for the most part, it is found in Caucasians. People with European ancestry are more at risk, and those with ancestors from western Ireland are the most vulnerable of all, since 1 in 60 there have it. It tends to

**RAVAGES OF OSTEOPOROSIS** The hip in the left panel is normal, with excellent bone density and structure. By comparison, the hip in the right panel is severely osteoporotic, with marked reductions in these and other determinants of healthy bone. This patient with glucocorticoid-induced osteoporosis also suffers from avascular necrosis, a disease that destroys the vitality and shape of the femoral head.



DOUGLAS A. TOWLER, MD, PhD



run in families, especially in first-degree relatives. Down Syndrome and Type 1 diabetes also are linked to a higher risk for the disease.

"Over the past few years, awareness has significantly increased," says Nancy C. Bradley, RD, LD, CDE, a clinical dietitian at the School of Medicine who sees adult patients.

Now physicians have access to a successful screening blood test, tissue transglutaminase (tTG), which pinpoints 95 percent of cases. A negative tTG test effectively excludes the diagnosis of celiac disease; physicians rely on the gold standard of celiac tests — a biopsy of the small intestine through upper gastrointestinal endoscopy, performed before a patient has given up foods containing gluten — to confirm a positive diagnosis.

"Once people start to alter their diet, it alters the result of all these tests," says Rothbaum, professor of pediatrics and clinical director of pediatric gastroenterology and nutrition. "So it is important to have as clean information as possible when the diagnosis is established."

This diagnosis sets patients on a difficult dietary path, since the gluten-free regimen is hard to follow. Children may find it especially tough. "It means going to parties with a kind of sign on the child: no cookies, no cake," says Keating. "If the person didn't feel sick before diagnosis, then the disease becomes the diet, instead of the celiac problem."

After identifying the disease, physicians often refer patients to a dietitian who can explain which foods contain gluten. Not only is it present in obvious products — bread, pasta, pastries — it can lurk in unexpected places, such as



An array of food items and support materials used to teach patients about celiac disease are surveyed by Nancy C. Bradley, RD, LD, CDE, and William F. Stenson, MD, below.

non-distilled white vinegar, most soy sauces, even makeup and medication. Going to restaurants becomes a burden, as celiac sufferers must quiz wait staff about ingredients or possible cross-contamination of food by contact with gluten-containing items.

"One thing we tell patients is that they have to be religiously observant about the diet," says Stenson. "Removing 90 percent of the gluten from your diet is the same as doing nothing. You have to remove all of it."

Failure to do so means further intestinal damage and possibly an increased risk of intestinal lymphoma. "I tell people to think of it as a poison in their system that is doing damage," says Bradley, who also works in Diabetes Education and Nutrition Counseling at Barnes-Jewish West County Hospital.

Adams, who helped found the Bi-State Celiac Support Group ([bscsg.org](http://bscsg.org)) after her diagnosis, has seen remarkable recoveries among fellow sufferers. One woman's migraine headaches disappeared; another, undergoing tests for multiple sclerosis, suddenly felt her chronic fatigue vanish, she says.

"Some celiac patients come to see me, upset about the diagnosis," says Bradley. "But overall, if they have had symptoms, they feel relief that they finally have an answer, and there is something they can do about it." □







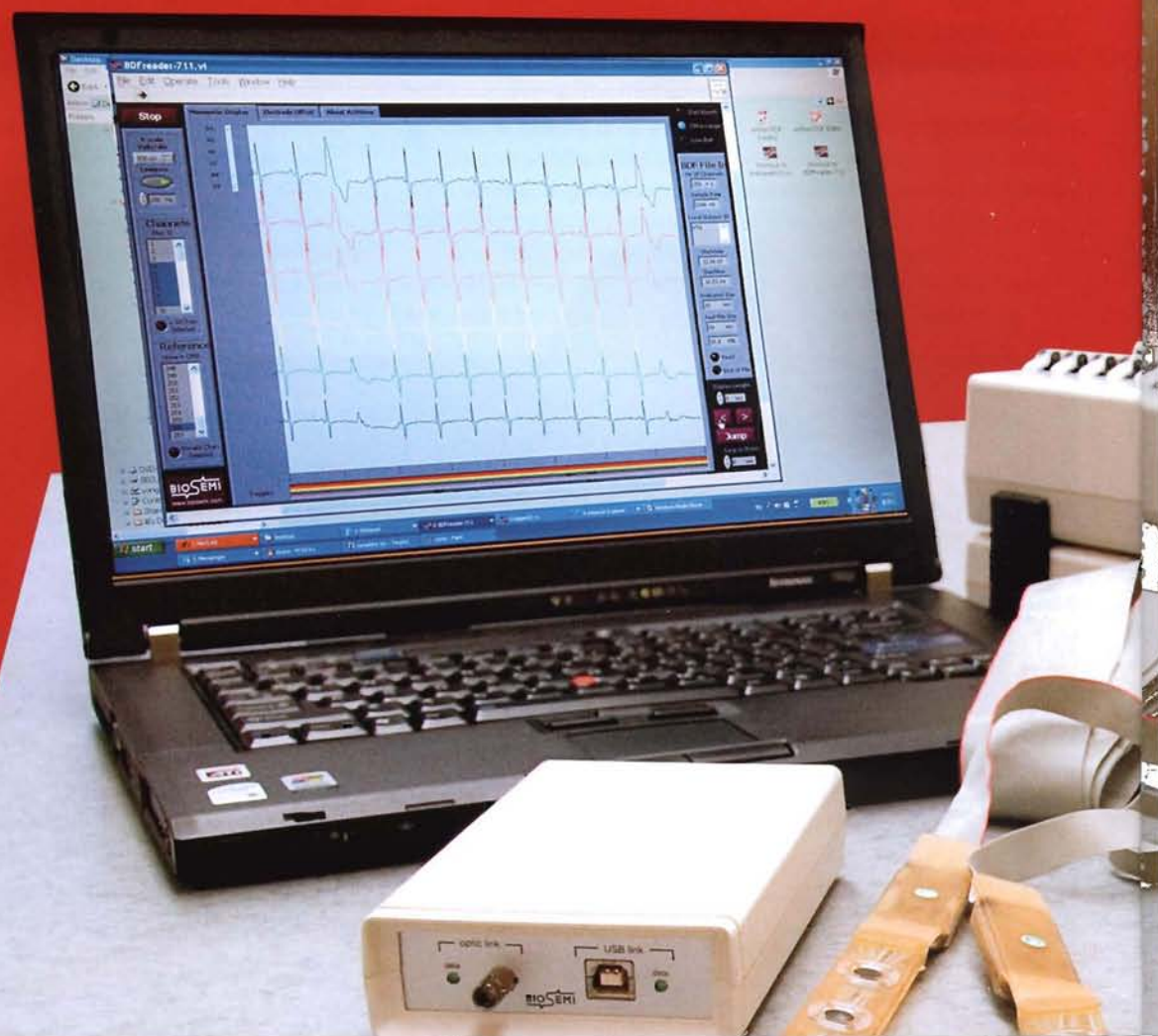
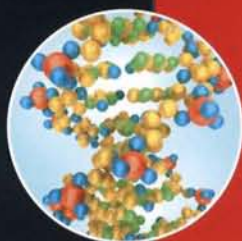
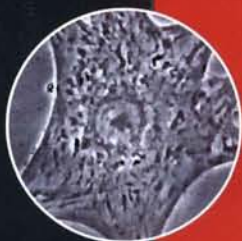
Understanding the electro-physiological properties of the heart can help prevent a leading cause of sudden death

# MEASURED IMPULSES

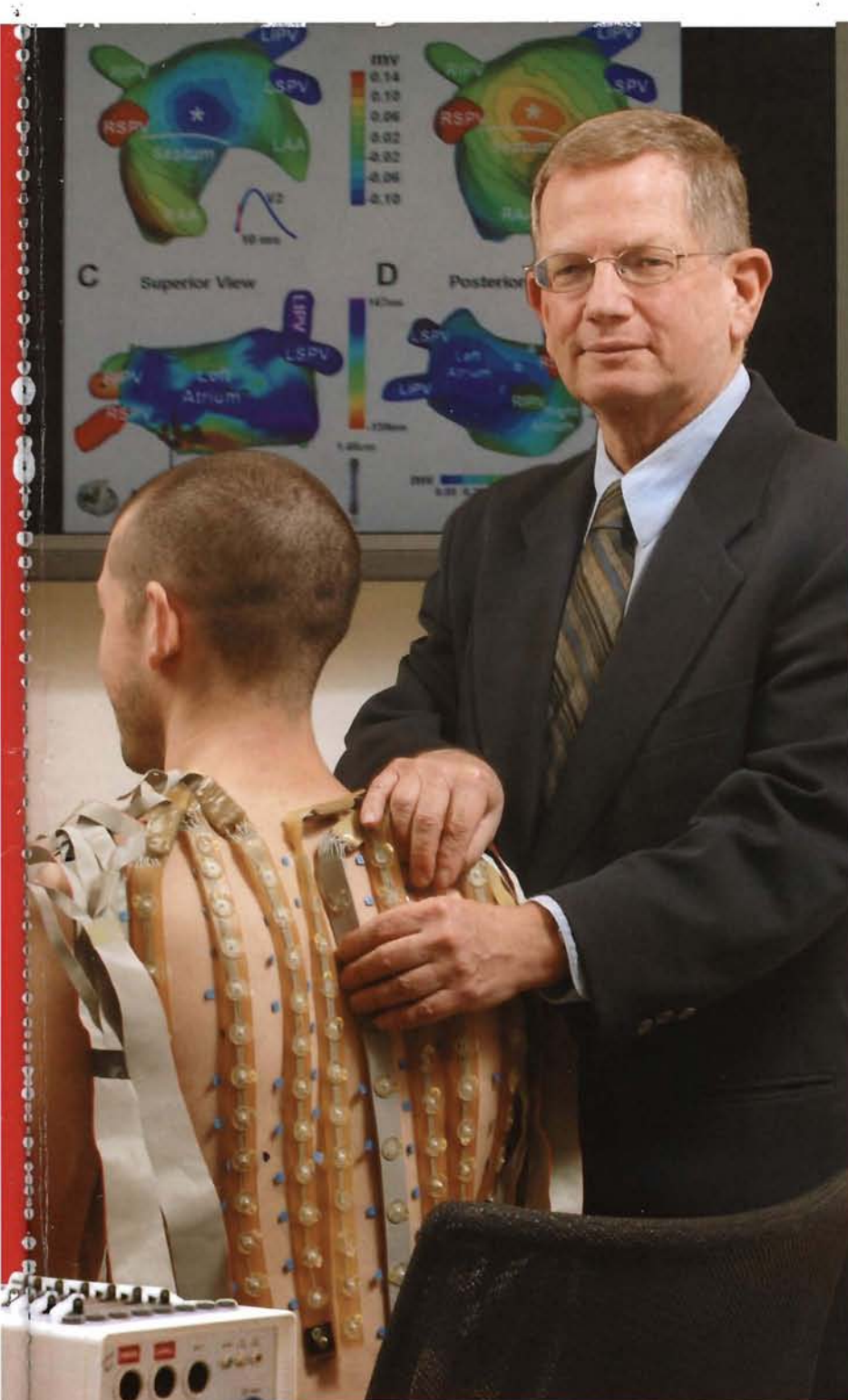
BY GWEN ERICSON

... KA-thump. KA-thump. KA-thump. KA-thump...

Most of the time, the heart pounds out a regular beat. But with certain disorders, the heart's rhythm can become too slow, too fast or irregular. That's termed arrhythmia, and heart arrhythmias kill 7 million people worldwide each year, a figure that includes 400,000 per year in the United States alone.







This array of sensors offers dramatic improvement over the traditional electrocardiogram, according to Yoram Rudy, PhD, director of the Cardiac Bioelectricity and Arrhythmia Center. The technology offers the means to pinpoint electrical trouble spots in the heart.

"Sometimes you hear about an athlete who falls dead on the basketball court or an older man who survives a heart attack and then later dies unexpectedly while driving his car," says Yoram Rudy, PhD, the Fred Saigh Distinguished Professor of Engineering. "These sudden deaths are likely due to rhythm disorders of the heart. Arrhythmias cause disability or a compromised quality of life for many more people, and the incidence of these disorders is increasing as the population ages."

Rudy came to Washington University in 2004 and set up the Cardiac Bioelectricity and Arrhythmia Center (CBAC), which he directs. CBAC brings together researchers from the Danforth and medical campuses, including biophysicists, physiologists, biomedical engineers, cardiologists, radiologists and surgeons. CBAC members are uncovering new information about the electrical properties of the heart and the causes of cardiac arrhythmias using mathematical and computational tools and novel imaging technologies. ▶

**ON THE WEB**

[rudylab.wustl.edu](http://rudylab.wustl.edu)

[cbac.wustl.edu](http://cbac.wustl.edu)



# THE *ELECTRIC* HEART

**T**hough often thought of as a mechanical pump, the heart is controlled by waves of electricity. Most cardiac-related sudden deaths are due not to mechanical problems, but to failed synchronization of the electrical impulses. Understanding the nature of the heart's healthy and erratic electrical activity is the mission of the Cardiac Bioelectricity and Arrhythmia Center (CBAC).

"Glassman"  
by Kirk Moldoff

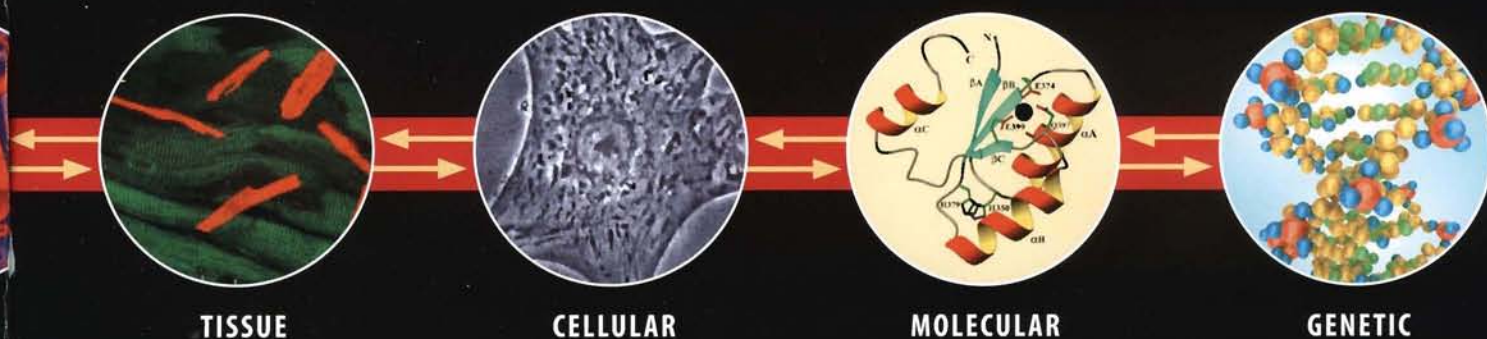
A multi-scan



ORGAN

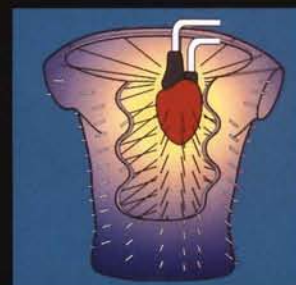
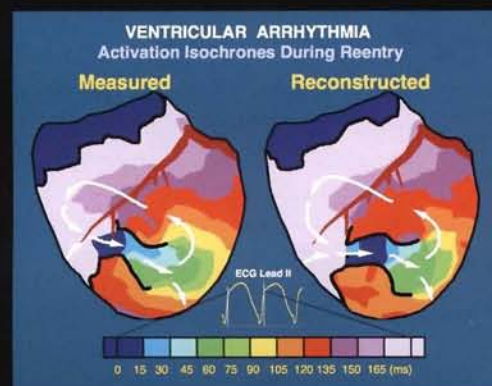
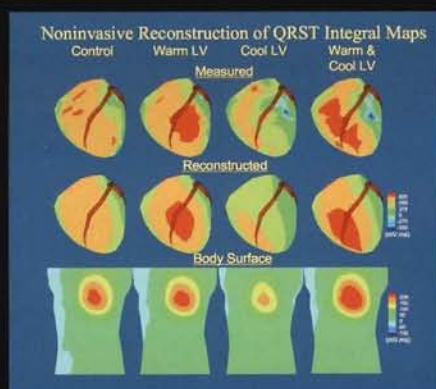
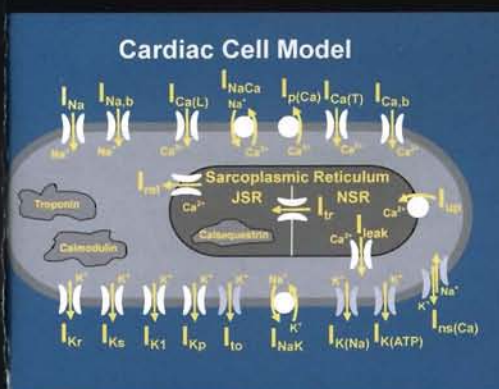


*Interdisciplinary effort to decipher the electro-physiological properties of the heart at all levels:*



## Studying the mechanisms of rhythm disorders

Millions of cells make up the heart, but the malfunction of just a small group of cells can create electrical waves that dangerously compete with the heart's normal electrical signals. Researchers aim to understand such complex biophysical processes by studying the whole heart as well as the genetic and molecular traits of individual cells. Computer models enable researchers to virtually examine the operation of cardiac cells and tissue, and systemic imaging helps integrate these components. The breadth and depth of the projects under way point to the convictions of CBAC investigators to grapple with this problem from every angle.



## Developing new tools for diagnosis and treatment



As a more coherent picture of cardiac arrhythmias begins to emerge, new methods will help to pinpoint trouble areas and enable more precise diagnosis and treatment of bioelectrical-related health problems. An array of 250 data sensors — as portable as carry-on luggage — shows great potential to better the performance of the ubiquitous electrocardiogram, with its half-dozen or so sensors. The benefits of this and other developments will arrive through drug and interventional treatments as individual as a human heart.





The CBAC computer lab's open floor plan facilitates collaboration.



**Arrhythmias** occur when heart defects perturb the electrical impulses responsible for the heart's contractions. Electrocardiogram, or ECG, a more than 100-year-old technology, measures these electrical signals using electrodes attached to a patient's skin. ECG can diagnose arrhythmias and monitor the effects of drugs or devices for regulating the heart, but relies on just six to 12 electrodes.

Rudy foresaw that a more precise method for measuring the heart's electrical activity would be a significant medical advance. He and his colleagues ultimately came up with a vest-like array of 250 electrodes that allows highly detailed mapping of electrical signals emanating from the heart. Just as importantly, they found ways to combine these readings with computed tomography (CT) images of the heart to pinpoint the source of abnormal electrical activity. This new technology is called electrocardiographic imaging or ECGI.

Predicting the heart's electrical activity based on signals picked up from the skin requires working backwards from effect to cause; researchers term this "the inverse problem."

"Not only did we need to devise the mathematics to solve the inverse problem, we had to deal with the fact that the signal at every body-surface electrode is an integral effect of the electrical activity over the entire heart," says Rudy, also professor of biomedical engineering, cell biology and physiology, medicine, radiology and pediatrics. "Then we had to develop computer algorithms to combine the electrical measurements with realistic geometries of the human torso and heart."

**School of Medicine researchers** are collaborating in CBAC to test ECGI as a diagnostic and treatment tool. A proof-of-concept study of ECGI for treatment of children with Wolff-Parkinson-White syndrome (WPW) showed how quickly the technology could locate problem areas on the heart.

"Kids with WPW have a short circuit in their heart muscle, says Edward K. Rhee, MD, adjunct assistant professor of pediatrics at the School of Medicine and director of Invasive and Arrhythmia Services at St. Joseph's Hospital and Medical Center in Phoenix AZ. "The standard mapping procedure takes about two hours; with ECGI, it was done in minutes."

In the standard procedure, the treating physician has to move a mapping catheter bit by bit through the heart to map the electrical activity of the whole organ. ECGI was able to find the source of the problem in the hearts of children with WPW just as accurately, but in a much shorter time and without the need for an invasive procedure.

Rhee asserts that one promising future application of ECGI is treatment of a type of heart failure in which areas of the heart contract too late. ECGI can guide placement

of pacemaker electrodes, which then resynchronize contractions.

Bruce D. Lindsay, MD, professor of medicine and director of the Clinical Electrophysiology Laboratory, is a member of CBAC.

Along with other types of arrhythmias,

Lindsay investigates and treats atrial fibrillation in which the heart's upper chambers contract chaotically. "ECGI can help us decide what areas of the heart to target with ablation techniques to eliminate fibrillation," Lindsay says. "But it also promises a better fundamental understanding of the circuits that cause atrial fibrillation and the regions of the heart that sustain the abnormal contractions."

If the technology can be developed so that patients can wear the ECGI vest while going through their typical day, it could record electrical activity during arrhythmic episodes and would be far more sophisticated than anything now available, according to Lindsay.

ECGI's high resolution has potential to help surgeons better plan antiarrhythmic heart surgery, and some day its precision also may help doctors screen and identify patients at high risk of sudden death before it's too late.

**But ECGI isn't the only implement** in the CBAC toolbox. The researchers also developed computer models that replicate the complex functions of heart muscle cells to learn more about the mechanisms underlying cardiac arrhythmias.

The heart's electrical impulses are carried by charged molecules, or ions, as they flow through channels in the walls of the heart's cells. Minute changes in the structure or other properties of these channels — through genetic mutation or disease — can interfere with ion movement and disrupt the heart's electrical cycle. Rudy's group developed mathematical formulations to account for the various ions and channels in real cardiac cells. Using their computer models, researchers can manipulate virtual heart cells to test the effect of alterations in ion flow and channels.

Because the heart's cells work together, Rudy's lab has taken computer modeling to the next step and combined cells to recreate virtual cardiac tissue. Their cellular and multicellular computer models can be used to identify drug targets, steer drug design and simulate the effects of arrhythmia treatments. Together, ECGI and cardiac computer modeling represent a successful wedding of basic research and theory to clinical practice.

"Within CBAC, we are working closely with a variety of researchers and clinicians — in pediatric cardiology, adult cardiology, cardiothoracic surgery and radiology," Rudy says. "We are so pleased to be taking our basic research to research and application in people. We are now starting to have an impact on the medical treatment of arrhythmias." □





# young gynecology

Although women are the traditional focus of gynecologic health, pediatric gynecology offers sensitivity and skill for addressing problems facing young girls.

BY DIANE DUKE WILLIAMS

Within an otherwise healthy young body, a tumor grows undetected.





**W**HEN GIRLS REACH REPRODUCTIVE AGE, they sometimes pay a visit to a gynecologist because of recurrent abdominal pain linked to their ovaries and menstrual cycles. But Diane F. Merritt, MD, professor of obstetrics and gynecology, treats girls who are struggling with more unusual medical problems ranging from birth defects of the vagina and uterus to ovarian and uterine tumors to endometriosis. In 1985, she established Washington University's Program in Pediatric and Adolescent Gynecology — one of only a handful of programs of its kind in the United States — which fills an important clinical and academic niche in the medical field.



Diane F. Merritt, MD, specializes in the treatment of pediatric and adolescent gynecologic health and is an outspoken advocate of the special health needs of young girls.

"I have a particular passion for the care of reproductive health in young women and children and for advancing the field for the benefit of all," says Merritt, director of the Program in Pediatric and Adolescent Gynecology. "For a long time, these patients were overlooked by the medical disciplines — too young to be seen by most gynecologists and off the radar screen for the busy pediatrician."

Fifteen-year-old Megan Eye was one of those patients. Then a high school sophomore who sang in her church choir, Eye spent time with friends and led the marching band at Friday night football games. That changed in 2004; Eye started missing school, saying "no" to friends' invitations and sitting out band practices. She was in terrible pain.

Despite numerous trips to specialists, ultrasounds and blood tests, no one could tell Eye why she had a chronic ache on the lower right side of her abdomen. One bout of acute pain landed her in St. Louis Children's Hospital. The day she was admitted, Merritt came into Eye's room. "I thought she was going to tell me that there was nothing wrong or that the pain was in my head, like everyone else I'd seen," Eye says. "Instead, she changed my life."

Merritt remembers that Eye was in so much pain it was difficult to examine her. "She was tired, frustrated and emotionally spent," says Merritt, who promised to find the cause of the pain. When a sonogram proved inconclusive, Merritt performed a diagnostic laparoscopy to look for any acute process (like an ovary that has twisted on its blood supply or a blocked uterus) in need of immediate attention. Instead, Merritt found an oddly shaped uterus. Before committing Eye to major surgery, Merritt performed additional investigations to determine that Eye had a large tumor in her uterus. Merritt proceeded with surgery to remove the tumor — an adenomyotic

cyst — and also repaired Eye's uterus to preserve her ability to bear children.

When Eye recovered from surgery, she was gratified to find herself pain-free for the first time in two years. But Merritt's diagnosis and surgical expertise were not the only things for which Eye was grateful: She also appreciated her physician's bedside manner. "Dr. Merritt came every day and would sit and ask me about school and tell me about her family," Eye recalls.

"At first she didn't smile," says Merritt. "Girls this age should have sparkle in their eyes and be thrilled about life, but Megan had been in so much pain, she had clearly become depressed. I knew we had turned the corner when Megan finally smiled."

**In her practice,** Merritt sees a broad spectrum of complex cases. Vaginal agenesis, which affects one in every 5,000 female infants, occurs when the reproductive system doesn't finish developing *in utero*, causing the vagina and uterus to be smaller than usual or even missing, while ovaries remain normal. Some infant girls are born with two uteruses, known as duplication disorder, a condition most commonly associated with renal anomalies. Merritt also is recognized for her work in the repair of genital injuries, which can occur as the result of trauma or sexual assault.

"Diane Merritt has developed a world-class program in pediatric and adolescent gynecology," says George A. Macones, MD, the Mitchell and Elaine Yanow Professor and head of the Department of Obstetrics and Gynecology. "This area is of tremendous importance regionally, nationally and internationally, and we are very fortunate to have one of its leaders on our faculty."

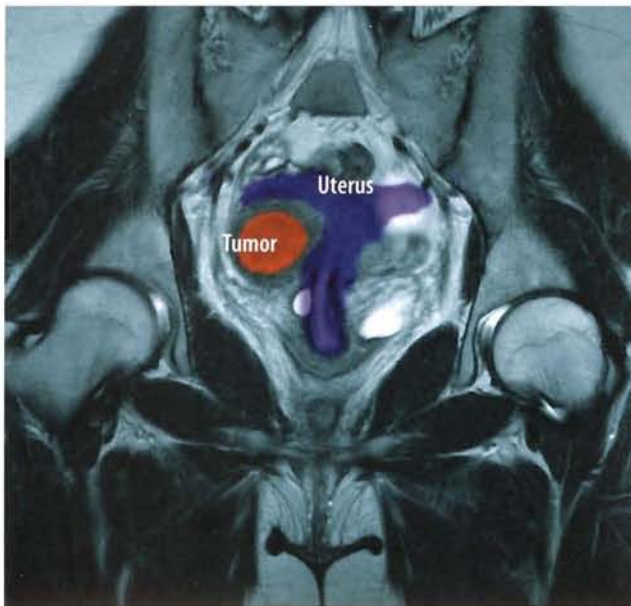
When Merritt chose obstetrics and gynecology as a specialty more than 30 years ago, medical schools taught very little about problems associated with pediatric and adolescent gynecology. She learned a great deal during her residency from Jessie L. Ternberg, PhD, MD, professor of surgery, during operations on patients with complicated congenital anomalies. "She's the one who said, 'Diane, you should become a pediatric gynecologist,'" Merritt recalls.

By developing protocols to diagnose specific problems, Merritt has done much to advance the field. She also has trained several generations of obstetrical and pediatric house staff to recognize the most common problems, conduct basic evaluations and treat teenagers in their practices. They send Merritt the more challenging cases.

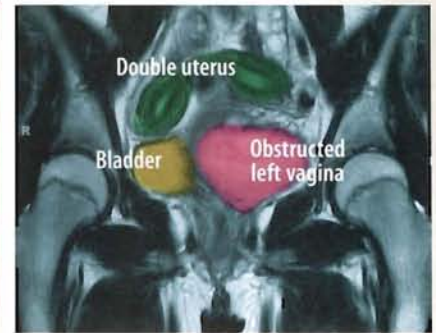
"Diane Merritt filled a huge gap in care," says Ternberg, now professor emeritus of surgery. "She



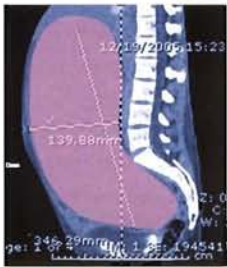
## Gallery of pediatric gynecology



A tumor within the uterus is an unexpected diagnosis for a young girl. Such a problem may go undetected by physicians inexperienced with the issues of pediatric gynecology. Following years of misdiagnoses and discomfort, acute pain brought this patient to St. Louis Children's Hospital, where Diane F. Merritt, MD, determined the hidden cause.



Trouble results when the anatomy fails to develop properly. Here, a "double uterus" has formed. The left side of the uterus and vagina were obstructed, filled with blood, and created a painful mass.



A 17-year-old girl found she could no longer bend to tie her ice skates. A benign tumor, far left, had filled her entire abdomen, compressing her vena cava and thereby causing massive swelling in her legs. The tumor, at left prior to removal, weighed 19 pounds.



Because ovarian tissue carries rich genetic information, it can form remarkable tumors of other tissue types. Here, an almost perfectly formed tooth grows on an ovary.

also made great strides in making adolescent and pediatric gynecology a viable entity."

In addition, Merritt spearheads an international fellows program. One fellow just returned to Bangkok, Thailand, to start her own pediatric and adolescent gynecology program; Merritt now is training a South Korean physician who will do the same when she returns home at the end of the year.

Lesley L. Breech, MD, one of Merritt's former fellows who now is director of pediatric and adolescent gynecology at Cincinnati Children's Hospital Medical Center, says she feels lucky to have trained with Merritt. "She's a person who cares a lot about education," Breech says. "She finds people who are interested and cultivates them to become excellent clinicians and educators."

**It's an exciting time** to be in the field because people are more open about gynecology and there's more emphasis on adolescent care, says Merritt, now president-elect of the North American Society of Pediatric and Adolescent Gynecology. "The goal is to enable these girls and young women to stay in school despite any gynecologic issues that may arise. We do not want them home in bed, missing out on life. We want them to have every opportunity to pursue their life goals."

When Eye met Merritt, she was planning a career in music education. But being treated by

Merritt convinced her to revisit a goal she had as a child — to become a doctor.

"Dr. Merritt really listened to me and was determined to figure out what was wrong with me," Eye says. "I'd like to help people like that."

Now 18, Eye is enrolled in the life sciences program at Forest Park Community College, which she hopes will help her make a final decision about medical school. While grateful to Merritt for restoring her health, she also is thankful for something else — a renewed faith in doctors.

"I hope that girls with similar problems will not sit back and accept something like this," Eye says. "They should keep searching for someone who leads them to an answer." □

**Merritt counsels patient Megan Eye, right, and her mother, Jamie. Newly interested in medicine, Megan Eye now works part-time at St. Louis Children's Hospital.**







Re-animating the monster  
as a metaphor for  
contemporary issues  
in biomedical ethics

**I**N MARY SHELLEY'S NOVEL *FRANKENSTEIN*, a determined scientist creates an unusual being — one who suddenly appears as an adult human, but enters the world knowing nothing about it, in the manner of a child. The gentle creature comes to love nature and learns about humanity by observing people. However, when he eventually attempts to communicate with others, he is rejected due to his grotesque appearance. It is only after this rejection that the creature is driven to destroy the very things he desired.

## The science [& art] of FRANKENSTEIN



The legendary creature of the book has inspired countless depictions in print, on stage and on screen. The illustrations of Barry Moser, renowned book designer, illustrator and printmaker, offer a contemporary vision of the horror and humanity of this timeless story.

This riveting tale is often portrayed as a horror story of gruesome thrills. However, Ira J. Kodner, MD, the Solon and Bettie Gershman Professor of Surgery and director of Washington University's Center for the Study of Ethics & Human Values, thinks Shelley's seminal novel foreshadows many of the ethical, medical and social challenges our society confronts today.

Kodner regularly presents "The Science of Frankenstein: Medical Ethics and Frankenstein's Monster," a lecture he created that explores the major themes of Shelley's novel — scientific experimentation, fears of science, the essence of being human, the power of isolation, the misuse of power — and how they relate to modern-day issues.

It's easy to see, says Kodner, how Frankenstein's obsession with creating life fits in with today's hot-button issues of embryonic stem cell research and any kind of genetic manipulation.

'What is acceptable science?' and 'When does it go too far?' are the types of questions he poses. Boundaries must be in place, says Kodner, but who sets those boundaries is critical: 'Are we doing science for the sake of science, or worse, for the sake of personal wealth and power?'

Just as the doctor in the novel displays passionate determination to attempt the seemingly impossible, the best intentions of modern medicine have generated some of what are arguably the greatest successes (lifesaving procedures, organ transplantation) and some of the worst nightmares (eugenics, the Manhattan Project).





The Pennyroyal Press edition of *Frankenstein; or, The Modern Prometheus*, featuring the art of Barry Moser, was the subject of an exhibit at the Department of Special Collections, Olin Library, in Fall 2007. The library owns the book and a complete set of prints.

Shelley also dealt with human nature and the power of isolation. In the novel, it is only after people reject the being that it turns on humanity, going on a rampage in which it destroys all that it once longed for.

It's possible to extend this theme to ways we deal with the underserved, the ugly or the deformed in our own society, says Kodner. Despite the creature's compassionate, human feelings, it was rejected by the world because it was ugly. In addition to the suffering caused when people are judged by their appearance, we also must consider the importance of our connections to other people, he says.

Kodner poses the question: 'What are our societal obligations to the less fortunate?', citing examples in our country's approach to providing health care for the uninsured, how we deal with the issue of HIV/AIDS, and how we care for the disabled. 'Where is the justice in having 45 million people uninsured?' 'How do we provide access to the system?' "These are issues of social isolation, even perhaps political isolation," says Kodner.

Rationing of health care for an aging population is another important issue that needs to be discussed, says Kodner. 'Is it right for us to spend 50 percent of our health care budget on people in the last six months of life?' he asks.

Medical ethics, says Kodner, offer important perspectives. He defines "ethics" as applied morality and says it's important to acknowledge that even the most basic research eventually has an impact on human life.

Mary Shelley does a good job,

says Kodner, of raising the possibility of getting lost in the science — how one can become obsessed with doing the science and forget the values.

"It's as if this young woman, just 19 years old when she wrote *Frankenstein*, understood what was ahead for medicine and society," Kodner says of the perennial classic's

author. "Shelley was an incredible genius who recognized the problems that confront humanity."

The complex issues raised in the novel *Frankenstein* are typical of those Kodner regularly addresses as director of the university's Center for the Study of Ethics & Human Values.

To facilitate dialogue on the most critical and controversial issues of our time, the center fosters research, education, and community outreach and service. Launched in 2003, it serves as a resource for the support of faculty and students from both the Danforth Campus and the School of Medicine, along with members of the greater St. Louis community, who undertake projects dealing with essential human values.

To date, the center has organized more than 200 programs with its mission in mind: to advance knowledge of human values through scholarship and an understanding of the practical application of values in human affairs.

Kodner thrives on asking the questions that get people thinking — and talking. As he sees it, his job as center director is to create a forum where people can do just that.

As the doctor in the novel exclaims: "So much has been done... more, far more, will I achieve: treading in the steps already marked, I will pioneer a new way, explore unknown powers, and unfold to the world the deepest mysteries of creation."

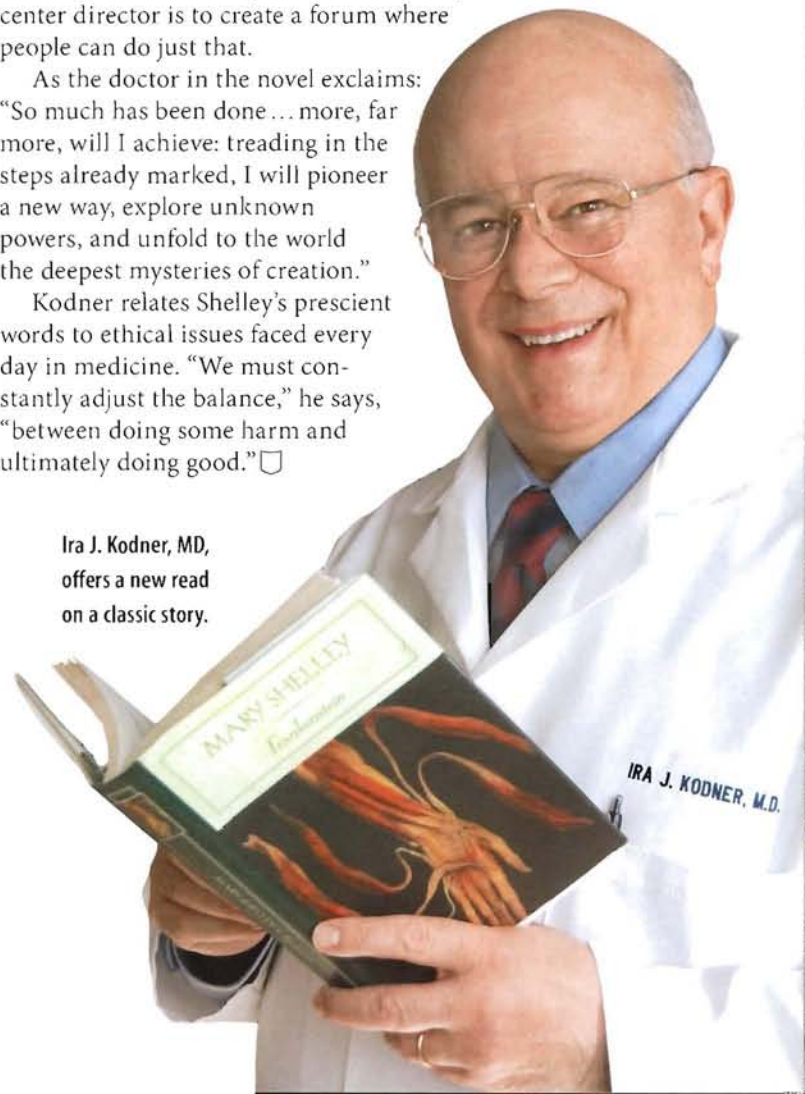
Kodner relates Shelley's prescient words to ethical issues faced every day in medicine. "We must constantly adjust the balance," he says, "between doing some harm and ultimately doing good." □

**ON THE WEB, VISIT:**  
Center for the  
Study of Ethics &  
Human Values  
[humanvalues.wustl.edu](http://humanvalues.wustl.edu)

"It's the power of great literature. Mary Shelley wrote something 200 years ago that's applicable today. The issues remain the same because human beings are human beings. Her genius was in seeing the issues."

— IRA J. KODNER, MD

Ira J. Kodner, MD, offers a new read on a classic story.





# Riding the storm out

Hurricane Katrina brought new meaning to the challenges of medical practice

**W**hen previous storms walloped New Orleans, James R. Douglas Jr., MD/PhD 76, and Melody J. Ritter, MD 77, made a habit of packing a bag and moving into the Ochsner Foundation Hospital to care for patients.

But when Hurricane Katrina hit in 2005, the couple was vacationing out of state. They hastened to the small town of Pinckneyville IL and took refuge with Ritter's mother. They remained glued to television coverage of the event, desperately trying to determine the fate of friends and colleagues.

"We couldn't reach anyone in New Orleans by phone," Ritter recalls. "We didn't know if the people who stayed behind were okay or what sort of shape our house in Kenner was in."

Douglas returned to the Ochsner Foundation Hospital after the hurricane to an eerie scene. On the green space in front of the hospital, National Guard units from various states had set up MASH units to provide basic first aid and vaccinations.

Necessary surgeries, many of them from traumas related to Katrina, were being carried out inside the hospital. "When I returned, we were one of only two hospitals up and running in New Orleans," Douglas says. "You can't imagine what it's like when hospitals in your area are closed."

The Ochsner Foundation Hospital fared better than most, losing only a few windows and suffering a short power outage. In Katrina's wake, dedicated health care professionals at Ochsner and other functioning hospitals pulled double duty to treat patients whose medical facilities were destroyed.

"Every single day since Hurricane Katrina has been an amazing day of coming to grips with the devastation of the whole Gulf South," Ritter says.

The couple count themselves fortunate: While they did completely lose a vacation home in nearby Ocean Springs MS, their home in the New Orleans suburb of Kenner suffered only minimal damage.

Both Douglas and Ritter got to New Orleans via St. Louis. Douglas joined the Ochsner Clinic Foundation in 1976 as a resident in medicine, but soon switched to anesthesiology. After completing his residency, he served on staff in the anesthesia department for two years before being named department chair and residency program director in 1982. He retired as chair in 1999 to return to the daily practice of anesthesiology.

Ritter, who met Douglas during her first few weeks of medical school at Washington University, joined him at the Ochsner Clinic Foundation when she graduated in 1977. She completed a medicine residency and joined the staff as an internist before completing fellowships in cardiology and anesthesiology. She then joined the anesthesiology staff at Ochsner in 1985. In addition, she was medical director of the hospital's critical care unit for five years and currently serves as medical director of the hospital's preoperative clinic.

In his free time, Douglas enjoys photography. Ritter is president of the board of the Jefferson Performing Arts Society in Metairie LA, and vice chair of the board of trustees of Northern Seminary in Lombard IL.

#### Relaxing at home:

Husband and wife James R. Douglas Jr., MD/PhD 76, and Melody J. Ritter, MD 77, at their Kenner LA residence, which suffered only minimal damage during Hurricane Katrina.







Unique art and culture: Bernard M. Jaffe, MD, HS 71, and his wife, Marlene, serve on several local arts and civic boards in New Orleans.

## Bernard M. Jaffe, MD, and his wife, Marlene, volunteered at Tulane University Hospital, caring for patients too ill to evacuate for Hurricane Katrina.

"The experience made me ever more grateful for my training and years of practice as a physician."

Bernard M. Jaffe, MD

Before the storm hit, Jaffe says, many in the hospital thought it would veer east at the last minute and miss the city. But after the Category 5 hurricane ripped through New Orleans, the hospital found itself surrounded on all sides by an extension of Lake Pontchartrain about three feet deep.

"The patients, their families, the staff and we physicians and our families were trapped and isolated," says Jaffe, professor of surgery emeritus at Tulane University Medical Center. "We were without electricity and phone service and, with over 90 degree temperatures outside, it didn't take long for the hospital to become unbearably hot. On that day, the only thing on our collective minds was getting the patients to safety."

Jaffe and other physicians and nurses used sheets held at the four corners, wheelchairs and stretchers to carry more than 200 very sick patients down dark, steamy stairwells to be flown by medical evacuation helicopters to functioning hospitals — some as far as 200 miles away. None of them suffered a complication, and there were no deaths.

"Although this harrowing event lasted only a few days, it felt like a lifetime," Jaffe recalls. "But it also was the clinical highlight of my long surgical career. We were able to care for and provide safe passage for very sick patients under the worst possible circumstances, with none of the technology of recent years, and in the midst of the worst that nature could possibly provide. The experience made me ever more grateful for my training and years of practice as a physician."

His early medical training took place at Barnes-Jewish Hospital, followed by eight years on the surgical faculty at Washington University School of Medicine. He then became chair of surgery at SUNY Downstate Medical Center in Brooklyn NY for more than 10 years before moving to New Orleans in 1992 to become professor and vice chair of the Department of Surgery at Tulane University Medical Center. He retired in 2006, but still spends several days each week at the medical school teaching residents and students.

His wife of 46 years, Marlene, MA 79, is a former art conservator. She currently is a commissioner of the Historic Districts Landmark Commission, the organization that reviews demolitions and rebuilding in the most heavily damaged historic districts in New Orleans.

The couple have two grown children, Mark and Debra, and three grandsons, whom they describe as the "apples of our eyes."



# Greater good

**Small-town values lead  
to big-time generosity**

**W**hen Howard Wood walks down the main street of Bonne Terre MO, people often stop him to ask if he is Wayne Wood's son. They'll then go on to tell stories about how his father assisted them in various ways.

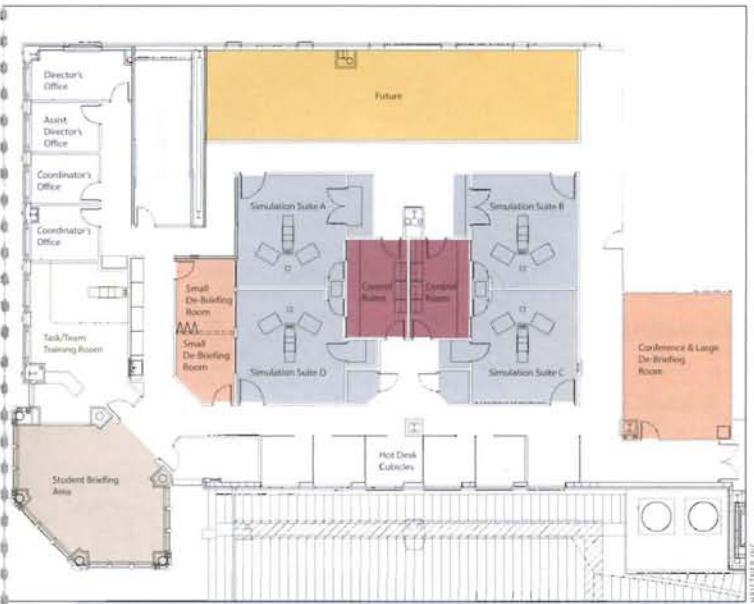
"I think my dad's legacy was the number of people he helped, both in the community and in his job as high school principal," Howard Wood says. "I think if my wife, Joyce, and I can look back on our lives and say we helped a lot of doctors, we'd settle for that anytime."

To that end, Howard and Joyce Wood recently made a \$2 million gift to Washington University School of Medicine. In recognition, the new 4,000-square-foot simulation facility in the Farrell Learning and Teaching Center will be named the Howard and Joyce Wood Simulation Center.

"Joyce has a special interest in the health arena, and I believe that health care delivery may be the biggest problem our country faces in the next 20 years," says Howard. "We want to do anything we can to make the quality of care better."

**A walk in the woods: Joyce and Howard Wood, along with faithful companion, Buddy, enjoy the natural beauty of their Bonne Terre MO home.**





**The Howard and Joyce Wood Simulation Center, currently in the design phase, will feature four main teaching rooms with simulation mannequins, work areas and offices. Construction of the facility is expected to be completed in the summer of 2008.**

According to David J. Murray, MD, the Carol B. and Jerome T. Loeb Professor in Medicine and director of the Wood Simulation Center, the new facility will offer patient care education in an environment that is both true-to-life and risk-free. "Using the mannequins," he says, "physicians, nurses, medical students and other health professionals can learn in a realistic, but much less stressful, environment."

While similar in appearance to those found in a CPR class, these mannequins are different: they appear to breathe, experience changes in blood pressure, have variable heartbeats and react to medical procedures and medications. "We're very excited about the simulation program," Joyce Wood says. "We've watched how it works, and you can see immediate results. It's a wonderful teaching tool."

The Woods value results. Both are certified public accountants and alumni of Washington University's Olin School of Business. Howard left the small mining town of Bonne Terre in 1957 to attend Washington University on a scholarship. Although St. Louis was only an hour's drive, it felt like a different world. "It was a dramatic change, because Washington University was in a city," he recalls. "I was thrown in with a group of people with diverse backgrounds. As a result, I came out much more well-rounded than if I'd gone anywhere else in this region."

**After graduating,** Howard joined accounting firm Arthur Andersen and eventually was promoted to partner in charge of the St. Louis office tax division and regional tax partner. In 1987, he joined Cencom Cable TV, a multiple system cable operator, as chief executive officer. In 1993, he and two partners co-founded Charter Communications, Inc., which became the fourth-largest cable operation in the United States. After the sale of Charter in 1999, he left the company in 2001 to form Cequel III LLC, an investor and operator in

"We are grateful that we can help Washington University. It's a wonderful feeling to be in a position to give back to a place that's been so significant in our lives."

## HOWARD AND JOYCE WOOD

the cable television and communications tower businesses, of which he is chairman.

Although she had roots in the tiny Missouri Ozark town of Arcadia, Joyce attended 14 schools before she graduated from high school; her family moved often because her father was a minister. She didn't attend college directly after high school, but eventually earned an associate's degree in math. A few years later, after marrying and having two children, Joyce decided to return to school. With the help of a scholarship, she attended Washington University, earning a bachelor's degree and a master's degree. Her education, she says, made a tremendous difference in her success. "I never would have had the opportunities to enter the business world at the level that I did if it hadn't been for Washington University."

Joyce also joined Arthur Andersen after graduating. She now is a principal of Wood & Associates, a management consulting firm based in Bonne Terre.

**At Washington University,** Joyce is a member of the School of Medicine National Council, while Howard serves on the university's Board of Trustees, the Olin School of Business National Council and the School of Medicine Finance Committee. In 1999, the Woods created the Wood Leadership Fellows Program at the Olin School, and in 2004, they established the Joyce and Howard Wood Distinguished Professorship in Business.

In addition to a commitment to Washington University, the Woods have contributed countless hours to other volunteer efforts. Joyce has served on the Governor's Committee on the Reorganization of the State of Missouri. Currently, she is a member of the boards of Parkland Health Center and Missouri Baptist Medical Center. Howard formerly was one of four commissioners appointed by the governor to the Missouri Conservation Commission. He also co-chaired the Olympic Festival Organizing Committee, the group responsible for attracting the 1994 Olympic Festival to St. Louis.

In their free time, the couple enjoys walking in the woods and riding four-wheelers on their property in Bonne Terre. They also treasure their nine grandchildren.

Both are guided every day by a small-town belief that people should give back to their community. "We are grateful that we can help Washington University," say the Woods. "It's a wonderful feeling to be in a position to give back to a place that's been so significant in our lives."



# Second Century Awards

The 2007 Second Century Awards were presented at a dinner at the Renaissance Grand & Suites Hotel in downtown St. Louis on September 28. The awards, bestowed annually since 1991, mark Washington University School of Medicine's entry into its second century of leadership in patient care, teaching and research.

**Bertha Benadine "Benny" and Theodore L. Bryan, MD 47**, made a commitment in 1999 to establish the Bryan Professorship in the John Milliken Department of Medicine.

The Bryans hope that the Theodore and Bertha Bryan Professorship in Environmental Medicine will expand the School's research in preventing and treating environmentally related diseases and better prepare students to care for patients suffering from them.

After graduating from the School of Medicine, Theodore completed his internship and residency at St. Louis City Hospital, where he met and married Bertha Cashen, a 1947 graduate of the City Hospital School of Nursing.

After serving during World War II, he practiced internal medicine for many years at the Medical Surgical Clinic of East St. Louis and Belleville IL. He also served for a time as medical director of Rosewood Care Center in Swansea IL. He retired in 1998.

Benny is a past president of the Women's Auxiliary of the St. Clair County Medical Society and has been an active volunteer with the American Red Cross, the Girl Scouts and the Memory and Aging Project of the School's Department of Neurology.

Both are Life Eliot Society Fellows. World travelers, they have visited more than 60 countries, often spending time at medical facilities.

**John W. Olney, MD**, is the John P. Feighner Professor of Psychiatry and professor of Pathology and Immunology (Neuropathology) at Washington University School of Medicine.

Olney is known for pioneering work that helped establish glutamate as a major neurotransmitter in the brain. After discovering that glutamate can kill nerve cells in the brain by overstimulating them, Olney coined the term "excitotoxicity," and hypothesized that glutamate excitotoxicity might play an important role in neurodegenerative diseases. His current research focuses on drug-induced developmental neuroapoptosis (neuronal suicide).

For 40 years, Olney's research has been well funded, primarily by grants from the National Institutes of Health (NIH). Currently, he is principal investigator on a MERIT Award and two other NIH grants providing more than \$1 million dollars of support annually.

**Teresa J. Vietti, MD**, is an emeritus professor of pediatrics and of radiology at Washington University School of Medicine.

Vietti acquired a national reputation as a pediatric hematologist/oncologist by specializing in childhood blood and cancer diseases and conducting innovative research into treatments for sarcomas and acute lymphoblastic leukemia.

She is the recipient of many awards and was an active member of numerous committees and societies. Most notably, she served as the first chair of the national Pediatric Oncology Group from 1980 to 1993.

Mentoring young physicians, a staple of her career, was an activity Vietti continued after she stopped seeing patients in 1998. As emeritus professor of pediatrics, she volunteered much of her time teaching and also writing. She fully retired in 2003.

Theodore L. Bryan, MD 47, and his wife, Benny, along with Teresa J. Vietti, MD, and John W. Olney, MD, are the 2007 recipients of the School of Medicine's Second Century Award.







School of Medicine Annual Fund chair Emily L. Smith, MD 68, assistant professor of radiology, and last year's committee chair John A. (Jack) Pierce, MD, professor emeritus of medicine, prepare to make their reports.

**T**he Eliot Society membership committee had its 2007–08 kickoff meeting in September. During the hour-long working session, those attending reviewed the previous year's results and discussed how to reach this year's goals.

The committee, like the Eliot Society itself, includes people from throughout the medical school community: alumni, former house staff, faculty.

Just as impressive as the committee's breadth is the deep loyalty of its members; those in attendance account for more than 200 years of Eliot Society support, and many volunteer for committee work each year as well.

Each member's goal is to make the case for joining the Eliot Society to selected friends, colleagues and classmates. The Eliot Society, whose members make gifts of \$1,000 or more to the Annual Fund, represents an important part of the Annual Fund's success. The School of Medicine's Eliot Society reached an impressive 816 members last fiscal year, and this year's committee, under chair Patricia A. Penkoske, MD 74, instructor in anesthesiology, has agreed to a goal of recruiting 900 members by June 30, 2008.

It was a full evening, during which the committee heard reports from last year's committee chair John A. (Jack) Pierce, MD, professor emeritus of medicine, and from Emily L. Smith, MD 68, who chairs the School's Annual

## 20 people, 200 years' support Eliot Society Kickoff



Committee members come from all areas of the School of Medicine: L. Maureen Valente, PhD, assistant professor of otolaryngology and director of audiology studies in the Program in Audiology and Communication Sciences, William W. Clark, PhD, professor of otolaryngology and director of the Program in Audiology and Communication Sciences, and Susan S. Deusinger, PT, PhD, executive director of the Program in Physical Therapy.

Fund. Members also received a brief overview of plans for the School from Larry J. Shapiro, MD, executive vice chancellor for medical affairs and dean, before adjourning for the evening.

The committee's work will continue throughout the fiscal year. Members have sent out hundreds of letters inviting others to join the Eliot Society; some have already responded with a gift. The committee will follow up on these letters as they work toward making 2007–08 a record-setting year for the Annual Fund.



**Sarah Javier**

### Welcoming a new face in the alumni relations program

**S**arah Javier joined the Office of Medical Alumni and Development in July as director of alumni and constituent relations.

In her new role, she assumes responsibility for organizing the annual MD Reunion and coordinating the activities of the WUMC Alumni Association. In addition, she will oversee the HOSTS (Helping Our

Students To Succeed) program, which puts medical students in touch with alumni for residency evaluations or lodging during residency interviews.

Most recently, Javier served as event coordinator for the St. Louis Children's Hospital Foundation. She also has worked as a child life specialist at Children's Hospital.

The transition to working for the School of Medicine feels quite natural to Javier. During her clinical experience, she worked closely with

Washington University physicians, even contributing to a pain management study published in *Pediatrics*.

"I've always been interested in medicine, as well as education and research," says Javier. "I have a great respect for the School of Medicine and am excited about enhancing current programs and creating new opportunities to make it possible for alumni to get involved with and remain connected to Washington University in St. Louis."



## 1940s

### Lyle W. Burroughs, MD 48

Burroughs is retired from medicine and enjoys gardening, cars, reading and traveling to Florida to visit his children.

### Robert P. Gibb, MD 48

Gibb is a clinical professor in laboratory medicine at the University of Washington School of Medicine in Seattle WA. He is committed to environmental community issues and health care reform, and volunteers with the Western Pathologists Quality Assurance Association, the Chuckanut Mountain Park District Advisory Committee and the Whatcom County Law and Justice Council, among other organizations.

## 1950s

### Edgar Draper, MD 53

Draper is a professor emeritus at the University of Missouri School of Medicine. He has been elected to serve eight terms on the Board of Regents of the American College of Psychoanalysts. A current resident of Mississippi, he is involved with the Mississippi Mental Health Association, the Southern Psychiatric Association, the American Psychiatric Association,

the Golfers of the American Psychiatric Association, and the Jackson MS Bridge Club. He has been married for 58 years to his wife, Jane.

### Tillman M. Moore, MD 53

Moore is vice president and medical director of Pacific Coast Tissue Bank. He has authored and co-authored three papers in the last seven years and enjoys writing memoirs, counting coins and trying (still!) to play the banjo.

### R.B. Mernitz, MD 58

Mernitz is retired and enjoys woodwork-ing in his spare time. He takes at least one mission trip a year to Honduras.

### David L. Rabin, MD 58

Rabin is a research professor of community medicine at Georgetown University. He has been elected to the Executive Committee of the American Jewish World Service Board. He is involved in health care reform and supporting the social, economic and health grassroots development in the developing world.

## 1960s

### Gabriel S. Zatlin, MD 60

Zatlin is in full-time practice of family medicine and is a clinical assistant professor at Albert Einstein School of Medicine.

He married Jane Suttell, a friend of 26 years, on June 30, 2007. They enjoy spending time at their weekend house in Kent CT, where they relax and grow vegetables.

### Stanford I. Lamberg, MD 63

Lamberg is an associate clinical professor at Johns Hopkins School of Medicine. He recently closed his clinical practice to support the medical document management software he has designed, PCArchiver. In his spare time, he enjoys antique cars and long bicycle trips, bicycling up to 100 miles a week.

### Gordon F. Schaye, MD 63

Schaye, an ENT surgeon, is a founding partner of Health Care Partners, the largest physician-owned medical group in California. He and his wife own Historic Homes Restorations, with properties throughout the United States. He also writes a popular Internet site, [www.investorsrealtyblog.com](http://www.investorsrealtyblog.com).

### Barry A. Hendin, MD 68

Hendin is a clinical professor of neurology at the University of Arizona and serves on the Board of Directors of the National Multiple Sclerosis Society. He is also the vice chairman of the Banner Health Board of Directors. He is proud of and enjoys spending time with his three daughters and 13 grandchildren.

## Planning under way for MD Reunion 2008: Please join us

*Gather with  
your classmates  
in St. Louis  
May 8-10, 2008.*



WASHINGTON UNIVERSITY  
SCHOOL OF MEDICINE

### Reunion Social Chairs are planning the festivities

#### 1943

Russell G. AufderHeide,  
LA 39, MD 43

#### 1948

J. Neal Middelkamp, MD 48

#### 1953

Mary L. Parker, MD 53

#### 1958

To be determined

#### 1963

Glen D. Pittman, MD 63, and  
Thomas F. Richardson, MD 63

#### 1968

To be determined

#### 1973

David J. Carlson, MD 73

#### 1978

Mark E. Frisse, MD 78, EMBA 97

#### 1983

Robert J. Brown, MD 83, HS 88

#### 1988

Laura E. Wagner, MD 88,  
GR 89, HS 93

#### 1993

Robert R. MacDonald III,  
MD 93, and John E. Mason,  
MD 93

#### 1998

Heidi E. Joist, MD 98, and  
Susan B. Gurley, MD 98

For more details on MD Reunion 2008, visit: [medicalalumni.wustl.edu](http://medicalalumni.wustl.edu)



## 1970s

### **Mark Edwin Frisse, MD 78**

Frisse is the Accenture Professor of Biomedical Informatics at Vanderbilt University. He was named to the Accenture Endowed Chair in 2005, a position that acknowledges his research efforts to solve pressing health care problems through information technology and biomedical informatics.

### **Barbara D. Reed, MD 78**

Reed is a professor of family medicine at the University of Michigan. In the past few years, she has seen her two daughters graduate from college, helped her husband, **Philip Zazove, MD 78**, with his campaign for the Michigan State House of Representatives, took a research sabbatical and bought a lake house getaway. She continues to enjoy ice hockey, boating and tubing in her spare time.

### **C. James Holliman, MD 79**

Holliman recently received the Attending of the Year Award from the graduating emergency medicine residents in the Penn State University Emergency Medicine Residency Program. The residents also initiated a new annual ongoing award, the Jim Holliman Best Teaching Resident Award, for the emergency medicine resident demonstrating the best teaching effort and ability.

## 1980s

### **Peter Jon Rosenbaum, MD 82**

Rosenbaum is a staff anesthesiologist at the Stony Point Surgery Center in Richmond VA. He also is a certified flight instructor and instrument instructor. Flying, flight instruction and working out are his favorite pastimes.

### **Casey Carrick Younkin, MD 83, HS 87**

Younkin lives in Springfield IL and is an associate professor in the Department of Obstetrics and Gynecology at Southern Illinois University School of Medicine.

### **David Alan Lubarsky, MD 84**

Lubarsky has recently been appointed to the position of Senior Associate Dean for Quality, Safety and Risk Prevention and Assistant Vice President for Medical Administration at the Leonard M. Miller School of Medicine at the University of Miami. He is proud of having been the first graduate from the Scholars Program in Medicine at Washington University School of Medicine.

### **David Lee Watling, MD 88**

Watling is president of Anesthesia Associates and chairman of the Department of Anesthesiology at Empire Health Services. He enjoys hunting, fishing, skiing, biking, tennis and running. He also is involved in a number of professional organizations as well as Amigos de Salud y Amistad, a volunteer organization in Ecuador.

## 1990s

### **Colin Timothy McDonald, MD 93**

McDonald is chairman and chief medical officer of Specialists On Call, Inc. He founded Brain Saving Technologies, Inc., a privately held video company providing emergency neurology consultants in the community hospital setting.

### **Eric Juckeland Lenze, MD 94, HS 98**

Lenze joined the Washington University School of Medicine faculty in September 2007 as an associate professor of psychiatry. His research will focus on the treatment of geriatric anxiety and depression.

### **Dawn Renae Ebach, MD 98**

Ebach and her husband, Will T. Brown, welcomed a daughter, Paisley Ann, on April 9, 2007. Paisley joins 3-year-old brother, Gavin.

### **Christopher Ingard Ellingson, MD 98**

Ellingson is an orthopedic surgeon at the U.S. Naval Hospital in Sigonella, Sicily, Italy. He previously served as flight surgeon for the U.S. Marine Corps Harrier training squadron.

### **Kelly Klingler Newhall, MD 98**

Newhall lives in Chicago and is a pediatric allergist who is also the medical director of the Asthma Cares Network, a nonprofit group that educates and supports people with asthma and allergies.

### **Laura Marie Peregoy, OT 99**

Peregoy and her husband, Matt, welcomed their fourth son on Feb. 8, 2007. Eli Edward Peregoy joins his big brothers: Ethan, 8, Isaac, 6, and Adam, 1 1/2, in Sullivan MO.

## 2000s

### **Clare Alexandra Pipkin, MD 00, and Michael David Kappelman, MD 01**

Pipkin and Kappelman welcomed Sarah Margaux Kappelman on Feb. 1, 2007. Kappelman recently completed his Pediatric GI fellowship at Children's Hospital in Boston. Over the summer, the family moved to Chapel Hill NC and are adjusting to life in the country. Kappelman has taken a job on the faculty at the University of North Carolina and Pipkin has joined the faculty of Duke in dermatology.

### **Abigail Harmon Allard, MD 01**

Allard and her husband welcomed Madeline Elsa Allard on Aug. 12, 2007. Allard is currently staying home with their two children while her husband completes his gynecology/oncology fellowship. To her classmates she writes: "Hope all of you are well, and if you are in DC, please don't hesitate to call. We will be here until 2009."

### **Glen Douglas MacPherson, MD 01**

MacPherson and his wife, Tracie, welcomed triplets, Marguerite Anne, Zoe Claire and George Charles, on June 1, 2007. The triplets are healthy and have been well received by older siblings Alex, 2, and Emma, 4. MacPherson recently was promoted to major and has taken a position at the Air Force Research Laboratory, engaged in Human Systems Integration work.



**Amy Shirk Sparkman, MD 01**

Sparkman recently took a faculty position at the University of Oklahoma Children's Medical Center in the Division of Pediatric Emergency Medicine. She is very excited about moving home after so many years.

**Judy Ling Chen, MD 02**

Chen has a son, Linus, who is now 6 months old. She is currently doing a pediatric otolaryngology fellowship at Children's Hospital in Boston.

**Andrew Charles Glatz, MD 02**

Glatz is completing his last year of pediatric cardiology fellowship at Children's Hospital in Philadelphia PA and will be staying to do an extra year of fellowship in international cardiology. His son, Charlie, turned 1 year old on Sept. 28, 2007.

**Leana Sheryle Wen, MD 07**

Wen was selected from more than 2,000 applicants to travel to Africa with *New York Times* columnist Nicholas D. Kristoff to observe and write about Africa's problems as a step toward effecting change. She also has been named a Rhodes Scholar and is past-president of the American Medical Student Association.

## IN MEMORY

**Ethel H. Dawson, NU 32**

Dawson died on July 17, 2007. She is survived by her daughters, Wanda Meyer, Janice Standing-Roberts and Betty Flaim, nine grandchildren and eight great-grandchildren.

**Wilhelmina V. "Billie" Haffner, NU 33**

Haffner died on June 5, 2007. She met her late husband, **Heinz Haffner, MD 35**, while attending Washington University School of Nursing. They enjoyed their time together fishing at Rockbridge and going on trips to North Padre Island and Mexico. She is survived by a son, four grandchildren, four great-grandchildren and a sister.

**Clara Maupin Burke, NU 34**

Burke, of Laguna Woods CA, died June 1, 2007, at the age of 93. She had worked as a private duty nurse in Los Angeles after the war. She finished her career as a school

nurse for special needs students in Orange County. She is survived by her daughter and grandson.

**C. Harwell Dabbs, MD 45**

Dabbs died on Aug. 29, 2007. He is survived by wife, Diane, two sons and two daughters.

**Robert E. Funsch, MD 46**

Funsch died on July 23, 2007. He is survived by his wife of 56 years, Barbara Funsch; three sons, Daniel, Neil and Matthew; two daughters, Judith and Barbara; 15 grandchildren; two great-grandchildren; a brother and a sister. He was preceded in death by a grandson, Michael E. Funsch, as well as a sister, Dorothy Corley.

**Hazel Cockrell Anderson, NU 49**

Anderson died on June 23, 2007, after a long battle with cancer. She is survived by her husband of 54 years, **Eric Anderson, MD 52**; two sons, Eric I. Anderson Jr. and Wayne L. Anderson; a daughter, Carol L. Payne, and five grandchildren.

**John R. Fischer, MD 49**

Fischer died on July 29, 2007, at age 84. Born and raised in Martin County MN, he attended the universities of Minnesota and Arizona and then Washington University School of Medicine. He returned to his beloved Minnesota in 1950, settling with his wife, **Elinor Fischer, NU 48**, in Blooming Prairie to practice medicine and raise their three children. He was proud of his family and heritage, and especially of his medical service to his patients and friends in Minnesota, which he recounted in his book, *Prairie Doctor*. He returned to Washington University in 1966, specialized in psychiatry, and then practiced in the St. Louis area until 1987. He and Elinor retired to Hermann MO, where he enjoyed gardening, raising grapes and making wine. He is survived by Elinor; a daughter, Holly; sons John and Frederick; and three grandsons.

**Grace C. Peters, HA 50**

Peters died on April 14, 2007, in St. Ann MO. She is survived by her husband, Everett T. Peters, and two children, Mary Jane Garrison and Everett T. Peters Jr.

**David M. Witten, MD 54**

Witten died on May 12, 2007, in Rochester MN. He served in the U.S. Navy in World War II prior to pursuing undergraduate studies and medical school. He began his medical career in general medicine, but later moved into radiology after taking a fellowship at the Mayo Clinic in Rochester MN. He joined the Mayo staff in 1960 and practiced there for 10 years. Witten was a professor and chairman of radiology at the University of Alabama at Birmingham and later chairman of radiology at the University of Missouri-Columbia. He retired in 1987 but remained active as professor emeritus of radiology at the University of Missouri until 1999. Witten authored numerous textbooks and publications on radiology, including some on the subjects of mammography and uro-radiology. He was a fellow of the American College of Radiology and a member of the American Roentgen Ray Society and the Radiological Society of North America. A wildlife photographer in his spare time, he was involved in wildlife preservation and environmental conservation. He is survived by his wife, Netta, and two sons.

**A. Robert Arnstein, MD 55**

Arnstein died on April 30, 2007, on Bainbridge Island WA at age 76. After graduating from Washington University School of Medicine, he received additional medical training at Massachusetts General Hospital and Stanford University Hospital, where he was chief resident in 1961. He later became head of endocrinology at Wayne State University School of Medicine in Detroit. After many years of private patient care, he finished his career teaching young physicians at William Beaumont Hospital in Royal Oak MI. He served as chairman of the Ethics Committee of the Oakland County Medical Society. He and his wife, Rita, moved to Bainbridge Island from Birmingham MI three years ago. He is survived by his wife, three sons, five grandchildren, a brother and a sister-in-law.

**Stephen E. Straus, MD, HS 76**

Straus, 60, died on May 14, 2007, of brain cancer. He was the founding director of the National Center for Complementary



and Alternative Medicine at the National Institutes of Health. A physician-scientist, Straus also held the position of senior investigator in the Laboratory of Clinical Investigation at the National Institute of Allergy and Infectious Diseases. He had extensive basic and clinical research experience related to many conditions including chronic fatigue syndrome, Lyme disease, HIV/AIDS, chronic hepatitis B virus and herpes infections. His achievements were recognized by election to many prestigious professional societies, appointment to the editorial boards of several scholarly journals, and receipt of five medals and other commendations from the U.S. Public Health Service, including the Distinguished Service Medal for innovative clinical research. He is survived by his wife, Barbara, two daughters, one son, his mother and two siblings.

**Barry S. Goldstein, MD, HS 82**

Goldstein died on June 8, 2007 in St. Louis MO. He is survived by his wife, Cathy Schulein Goldstein; a daughter, Alissa; a son, Brent; mother, **Carla G. Weintraub, LA 53**; and a brother.

## FACULTY

**Helen M. Aff-Drum, MD 34**

Aff-Drum died of cancer on Sept. 11, 2007, at age 99. She was a pediatrician in the St. Louis area for more than 50 years. She established a private pediatric practice in 1938 with her late husband, Clarence G. Drum, MD. She worked in the Pediatric Clinic at St. Louis County and Children's Hospital. She was the Clayton School District physician from 1945-85 and also worked for the Labor Health Institute and the Valley Park Well-Baby Clinic. She began Well-Baby Clinics in Troy and Warrenton MO. In 1963, she began working in the St. Louis Children's Chest Clinic and was responsible for bringing under control an epidemic of tuberculosis that broke out in a north county school. She retired from private practice in 1964. She was an emeritus associate professor of pediatrics at Washington University School of Medicine. She served many different organizations and received

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numerous honors, such as the American Lung Association Emily Bissell Lung Health Award for lifetime achievement. Born in St. Louis MO, she was the granddaughter of Johann Georg Aff, for whom Affton MO is named. She is survived by a daughter, three granddaughters and four great-grandchildren. Aff-Drum donated her body to Washington University's Memory and Aging Project and to Washington University School of Medicine.

**Albert Roos, MD**

Roos died on June 5, 2007, at age 92. He was a retired physician and professor of anesthesiology and physiology at Washington University School of Medicine. Born in the Netherlands, he came to the United States to further his medical training. He began his 46-year career at the School of Medicine in 1946 as a fellow

in cardiology and went on to become an instructor in physiology, a director of the Thoracic Physiology Lab, a member of the university's Department of Surgery, Division of Anesthesiology, and later a member of the Department of Physiology. Shortly after the first practical heart-lung machine that made open-heart surgery possible had been developed by John Gibson, MD, in 1953, Roos introduced it to St. Louis medicine. An accomplished pianist, he played chamber music in his spare time, sometimes with members of the Saint Louis Symphony. He is survived by his wife of 60 years, Mary Elizabeth "Lib" Benbow Roos of Kirkwood MO; two sons, Jack Roos of Kirkwood and Albert Roos of Vancouver, British Columbia; a brother, Jacques Roos of Paris; and three grandchildren.





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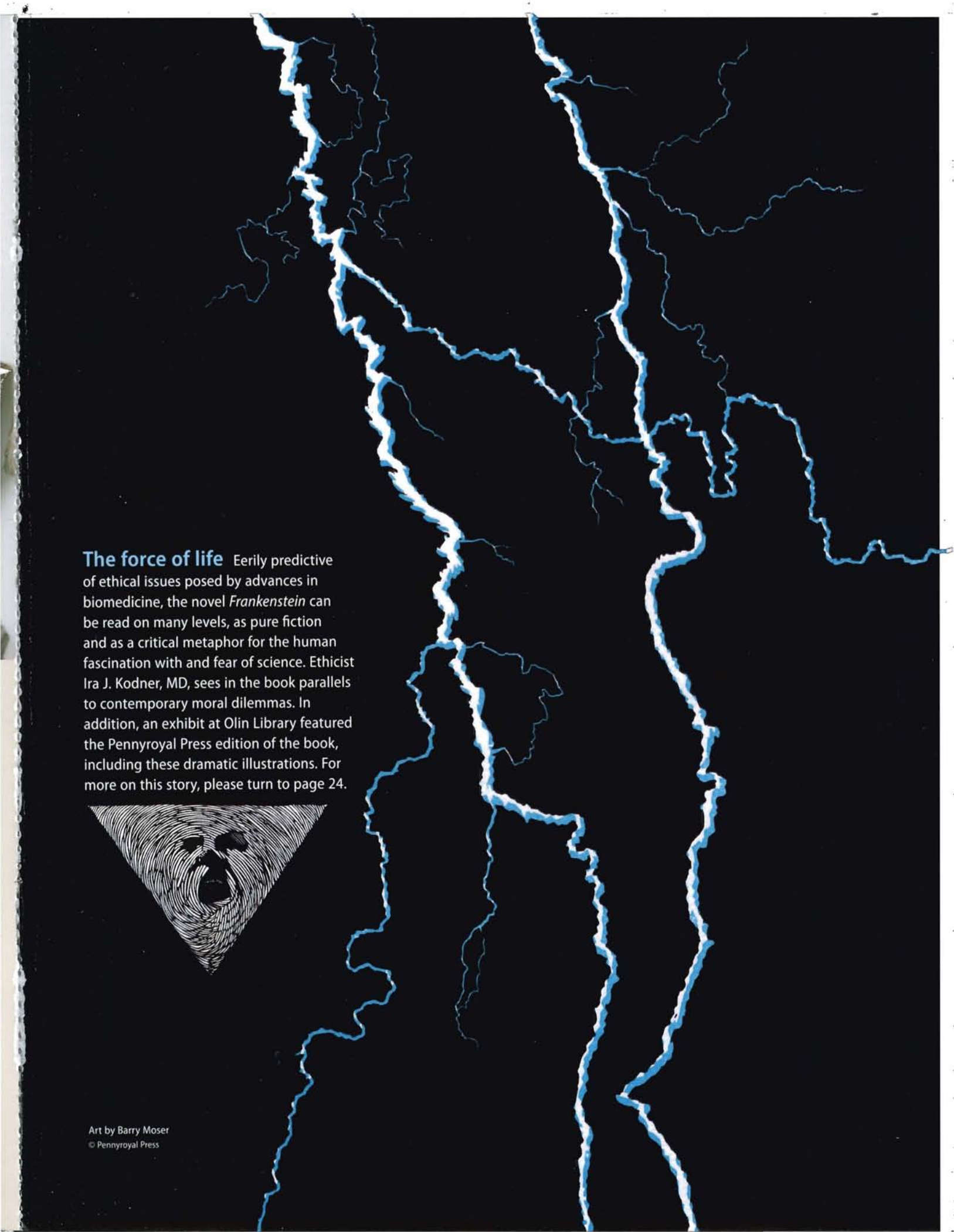
DON AND MARY HARKNESS, both MD 58, have established an endowed scholarship fund in memory of their daughter, Laurel, with current gifts and a bequest in their estate plan. Laurel Harkness, MD 86, died in 2003.

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**The force of life** Eerily predictive of ethical issues posed by advances in biomedicine, the novel *Frankenstein* can be read on many levels, as pure fiction and as a critical metaphor for the human fascination with and fear of science. Ethicist Ira J. Kodner, MD, sees in the book parallels to contemporary moral dilemmas. In addition, an exhibit at Olin Library featured the Pennyroyal Press edition of the book, including these dramatic illustrations. For more on this story, please turn to page 24.





**Center for science** The groundbreaking ceremony for the BJC Institute of Health at Washington University took place on October 30. The new structure, located at the southwest corner of Euclid Avenue and Children's Place, will be a key facility for BioMed21, the university's innovative research initiative designed to speed scientific discovery and rapidly apply breakthroughs to patient care. To learn more, please turn to page 2.



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